Better Homes and Gardens®

WOOD®

THE WORLD'S LEADING WOODWORKING MAGAZINE

OCTOBER 1992 • ISSUE NO. 55
Please display until October 12

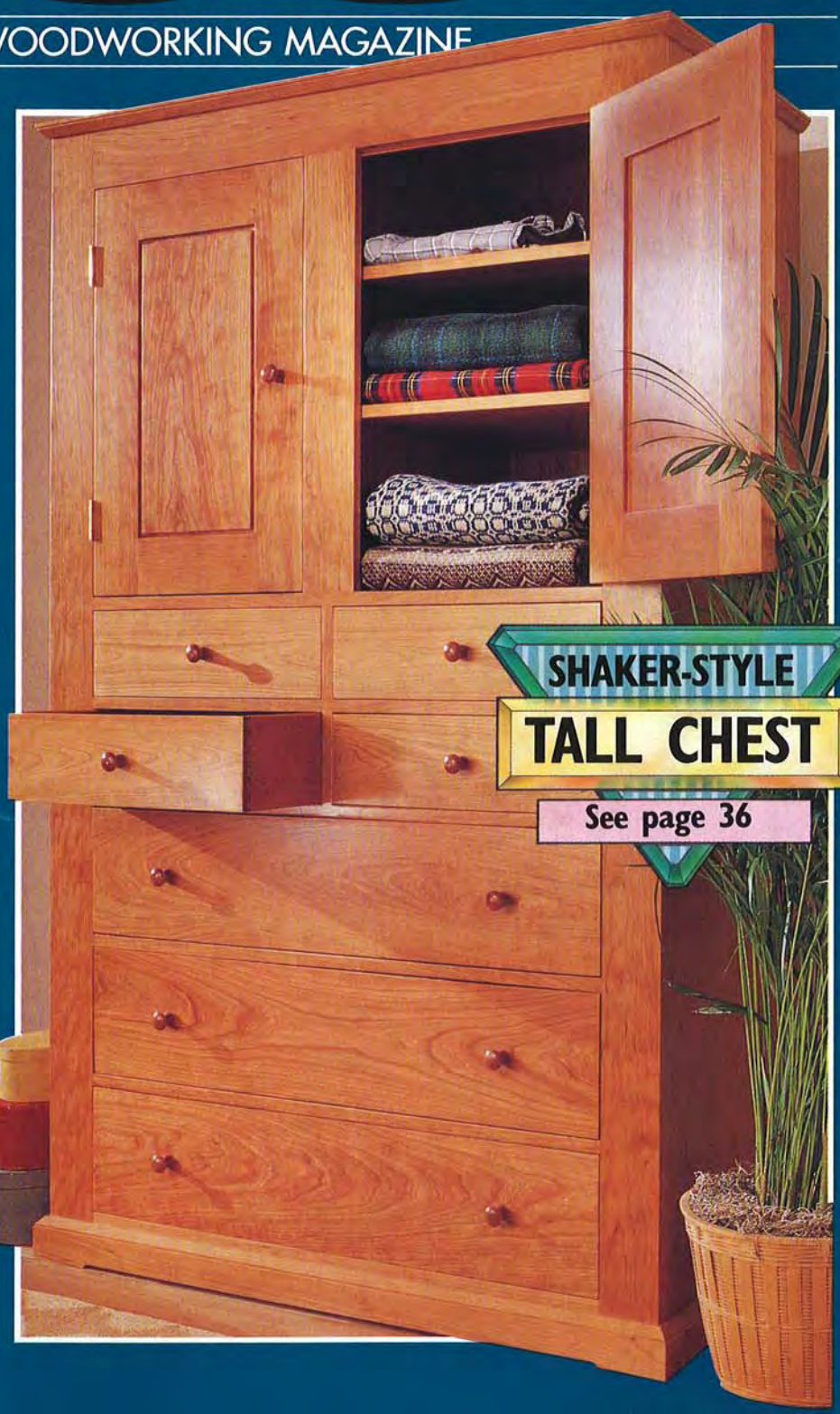
BUILD-A-TOY™ 1992 CONTEST WINNERS . . . Page 68

HOW TO MAKE DOVETAILED DRAWERS

15 INNOVATIVE PRODUCTS FROM OUR IDEA SHOP

SUPER PROJECTS

- C-clamp coatrack
- Man-in-the-moon shelf clock
- A dresser-top jewelry box
- Scrollsawed windmill plaque in 3-D
- Carved feather
- Clean-air cabinet
- Rolling pins



SHAKER-STYLE TALL CHEST

See page 36

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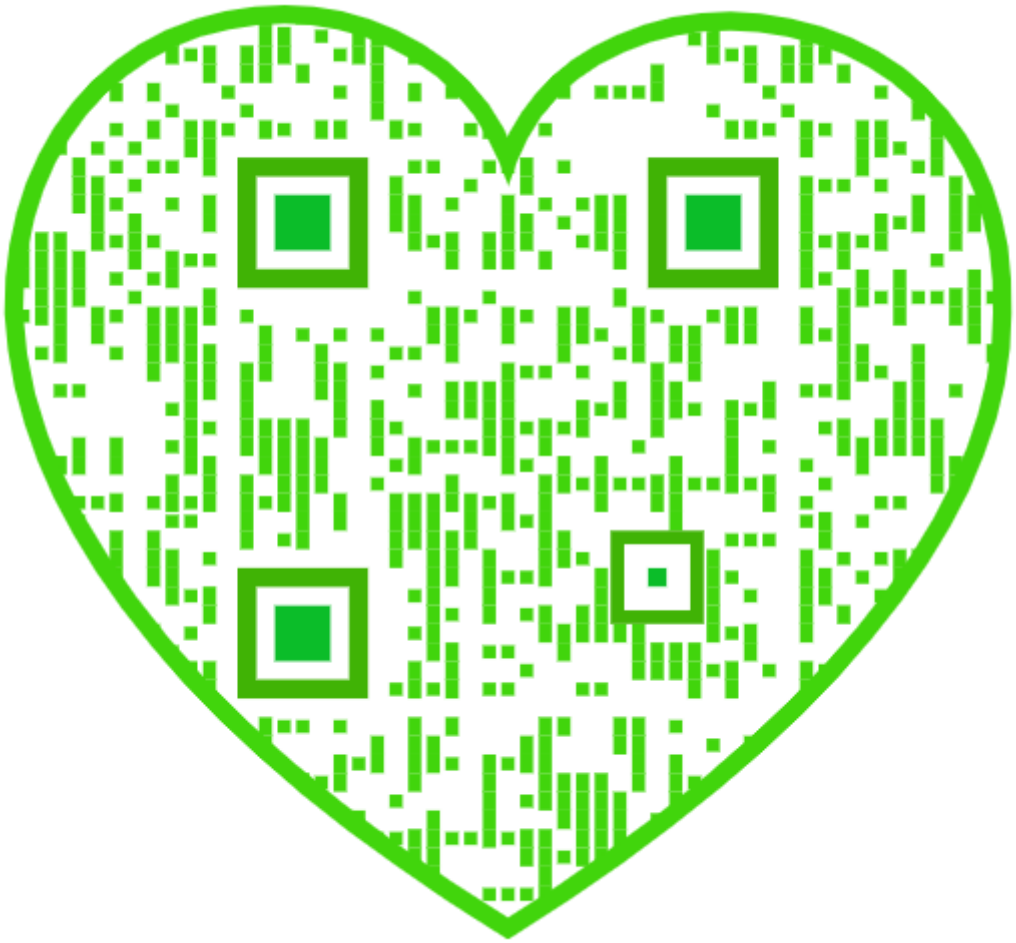

The American Toolmaker

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–Wood Mag. Sept. 91–

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Dept. B83

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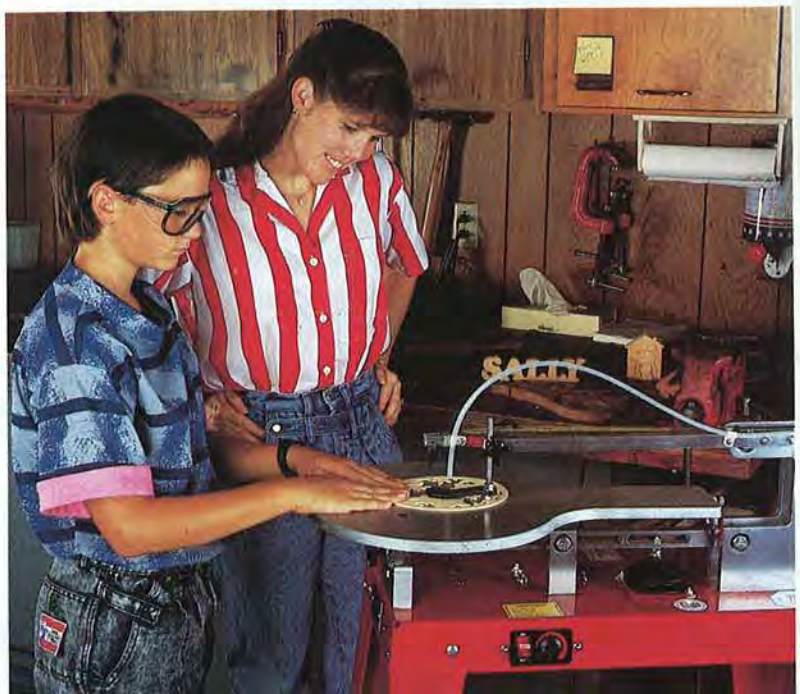

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THE EDITOR'S ANGLE

Print this article

HOT OFF THE PRESSES...

WOOD® MAGAZINE'S SUPER SCROLLSAW PATTERNS™ Service

Here at *WOOD* magazine, we pride ourselves on staying in tune with what our readers want. In a very real sense, you are the guiding light that directs our every move. When we hear that a sizable number of our audience want something, we do our best to produce it for you.

That's exactly what prompted us to come up with the idea for *WOOD* magazine's SUPER SCROLLSAW PATTERNS Service. We have known for a long time that lots of you enjoy doing scrollsaw projects. And why wouldn't you? They're fun, easy to accomplish, and make terrific gifts for family and friends.

Many of you also have asked us where to find high-quality, original patterns. The answer is *WOOD* magazine's SUPER SCROLLSAW PATTERNS Service.

Photograph by John Hetherington

Here's how it works. We will be joining forces with our network of contacts and churning out a non-stop stream of great-looking scrollsaw projects. Then, for those of you who care to subscribe to the Service, we'll send a pattern pack your way every two months. There'll be lots of excitement in each issue—I guarantee it. Clocks, wall plaques, centerpieces, puzzles, country cutouts, ornaments, alphabets, you name it, we'll be bringing them to you.

If you're a *WOOD* magazine reader who just can't get your fill of scrollsaw patterns, see our ad between *pages 80* and *81* to get a FREE issue of this new product. We've included 18 super designs in the first packet alone. Come and join in the fun.

Larry Clayton

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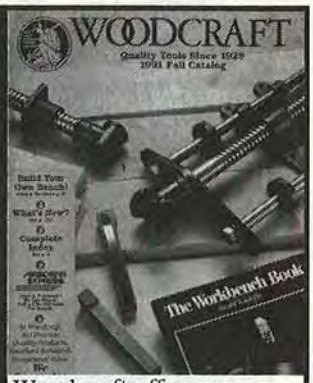

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Better Homes and Gardens®

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THE WORLD'S LEADING WOODWORKING MAGAZINE

This issue's cover wood grain: white ash *Cover photo: Wm. Hopkins*

OCTOBER 1992 ISSUE NO. 55

WOOD PROFILE

Butternut . . . walnut's kissin' cousin 23

For carving furniture, mantelpieces, and reliefs, few woods top butternut for its workability and subtle beauty.

CRAFTSMAN CLOSE-UP

Shoot-over decoys 25

Outdoorsman Grayson Chesser of Virginia's Eastern Shore no longer farms for a living. He found he can make better money (and have a lot more fun) carving and selling hunting decoys.

SHOP-TESTED TECHNIQUES

Making and installing dovetailed drawers 30

Add the look of quality craftsmanship to your furniture projects with the tried-and-true drawer construction process found here.

NOW YOU CAN BUILD IT

Shaker-style tall chest 36

Put your newly acquired drawermaking skills to work by building this exquisite bedroom piece. Featuring ample cabinet and drawer storage, it's like building two projects in one.

CARVING

Carve a colorful feather pin 44

Entry-level carvers and old hands alike will enjoy shaping, woodburning, and painting this life-sized replica of a wood duck feather.

IDEA SHOP

Air-filtration cabinet 48

Keep airborne dust from fouling your shop's environment (and your lungs) with our hardworking mobile unit. Note that the top raises for use as an outfeed table.

TURNING

Candy-striped rolling pins 52

Shape a trio of multicolored baking utensils, using a laminated wood product called Colorwood and the templates found inside.

Shining stars 54

Check out the special woodworking and storage products that came to our rescue when we assembled our IDEA SHOP featured in issue 54.

Dresser-top delight 58

Bandsaw owners, this one's for you—an intriguing three-drawered jewelry box that's as fun to make as it is to give.

IDEA SHOP

C-clamp coatrack 62

Need a fitting hook to hang your shop apron on? With this project you've got it, along with an extra for your hat and coat.

THE CRAFT SHOP

Man-in-the-moon shelf clock 64

It takes time to make time, but with our heavenly project, a day should suffice. See the full-sized patterns and painting instructions accompanying the plan.

Old-World windmill 66

With a fine-toothed blade mounted in your scrollsaw, you'll breeze right through this peaceful scene from the past. Overlapping parts give the wall plaque depth.

A great contest . . . again! 68

Don't miss this year's parade of winners from our annual toy contest. Then, enter 1993's competition (see the rules on *page 82*).

BUILD 'A-TOY™

SHORT-SUBJECT FEATURES

Editor's Angle	1	Air-Filtration Cabinet	74
Talking Back	8	Great Ideas For Your Shop	76
Tips From Your Shop	12	Ask WOOD	78
Products That Perform	18	1993 Toy Contest Rules	82
More Toy Contest Winners	72	Finishing Touches	88

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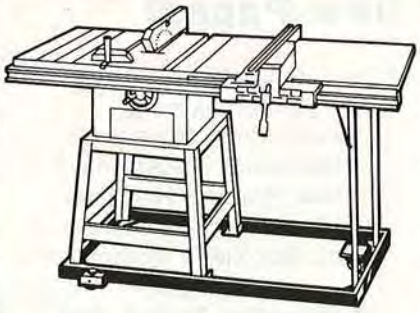

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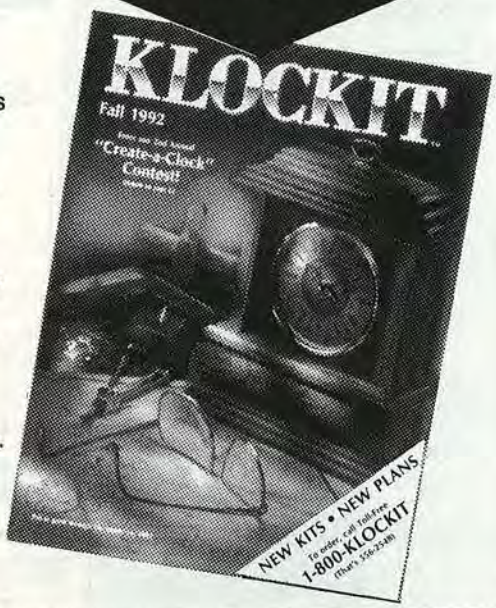

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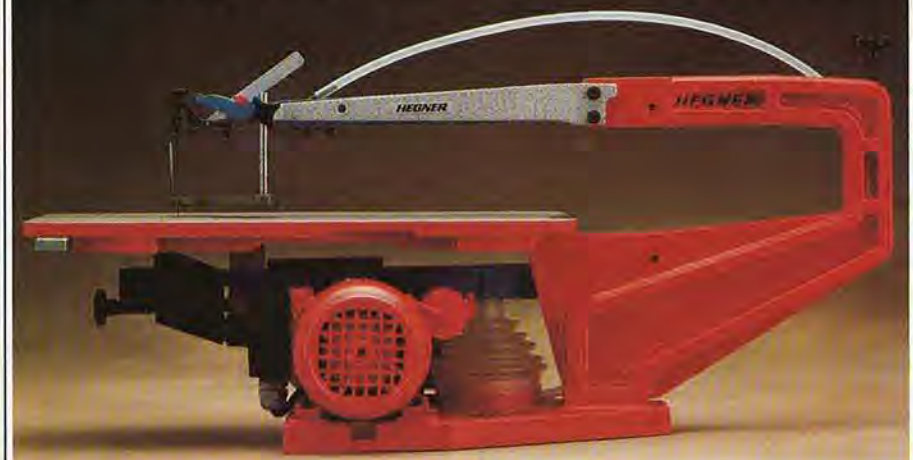

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Better Homes and Gardens® *WOOD*® (ISSN-0743-894X) is published nine times a year in January, February, April, June, August, September, October, November, and December by Meredith Corporation, 1716 Locust St., Des Moines, IA 50309-3023. Second-class postage paid at Des Moines, Iowa, and at additional mailing offices. Better Homes and Gardens trademark registered in Canada and Australia. Marca Registrada en México. **ONE-YEAR SUBSCRIPTION PRICES:** U.S. and its possessions, $24.97; Canada, $34; other countries, $38. **POSTMASTER:** Send address changes to *WOOD*, P.O. Box 55050, Boulder CO 80322-5050.

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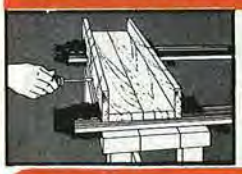

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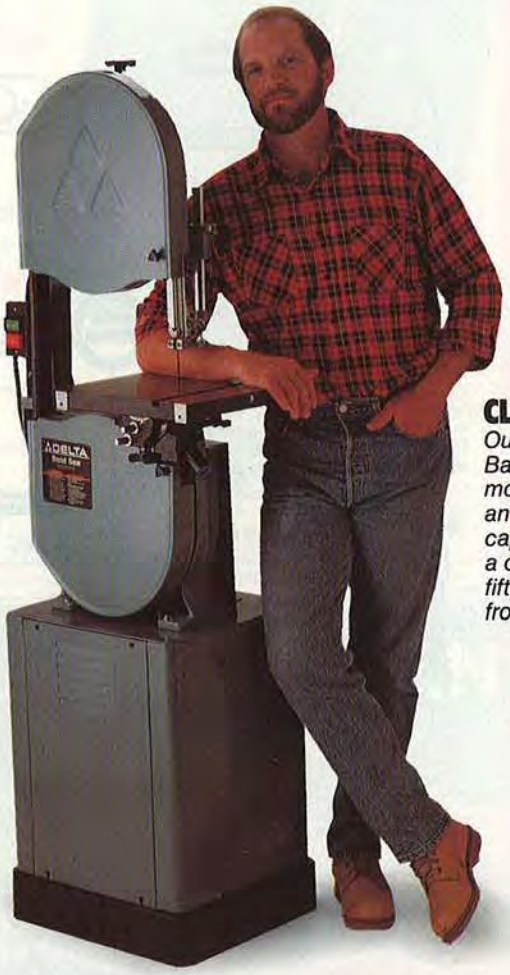

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TALKING BACK

Print this article

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, Better Homes and Gardens *WOOD*® magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.

Big surprise from toy contest

I entered a fire truck and a car in *WOOD* magazine's 1992 Build-A-Toy contest, student division. I was very surprised and happy when I found out I had won some prizes. I would like to thank *WOOD* magazine and all the sponsors who made this contest possible. I hope you have this contest in the future. Keep up the good work on all those informative articles.

—Jason Resch, Bryant, Wis.

Congratulations, Jason. Look for the 1993 Build-A-Toy contest rules and a complete list of 1992 contest winners elsewhere in this issue.

Must sell: Full set of WOOD magazines

Perhaps you can help me out of a dilemma. I've been a charter subscriber to *WOOD* magazine and have all 54 issues stored in my study here at home. I am a retired woodworking instructor and at 70 years of age, I don't see how it is possible to keep up with all of the fine projects shown on the pages of *WOOD*. All issues have been kept in mint condition in book boxes which I made in my home workshop. Since I am also running out of storage space, I would like to sell the entire set. Any suggestions would be a big help.

—Donald Kinnaman, Phoenix, Ariz.

Any takers out there? Drop Don a line at 6746 N. 10th Ave., Phoenix, AZ 85013-1008

Router mat cuts noise

I live in an apartment and, along with my neighbors, dislike noise. I have a Hegner scrollsaw which is quiet until you start cutting material more than ¼" thick and up. I found the thicker material creates considerably more noise. I have found a solution that I'd like to share with fellow readers. I cut a router mat to cover the scrollsaw work surface and taped it down with masking tape. I then covered the mat with heavy mailing tape. This reduced the noise level and also made it easier to guide the wood through the saw blade while working on it.

—Robert A. Lee, Croton-on-Hudson, N.Y.

Hard-to-find materials in store

I read the article "What You Really Need to Know About Buying Boards," in your April 1992 issue. The trouble is, I have a hard time buying raw materials in my area. For example, I have visited a dozen area lumberyards and building-supply stores trying to buy laminated particleboard for building your router table. None of the stores had any in stock. Five stores didn't even know what it was. Four knew what it was and said they could order it. Two said I could buy the particleboard and glue, then buy the laminate somewhere else and make my own. One suggested I call the local cabinetmaker. He would sell me a bundle of 24 4x8' sheets for $300. What am I supposed to do?

—James Wright, Lawrence, Kan.

James, we may have confused you and other readers through our use of the word "laminate." The heavy-duty worktop for the router table (issue 33) consists of two pieces of ¾" particleboard (available at all lumber outlets) glued together with contact cement. We call this laminated particleboard. It does not include the plastic laminate at this point. Next, glue ¾" thick by 1½" wide birch banding to the edges, followed by two pieces of plastic laminate (one for the top surface and one for the bottom surface of the worktop).

"Grooved" tables garner gripes

After reading your buymanship article on bandsaws in the April 1992 issue, I just had to put my two cents in. There should be a law against grooved tables on bandsaws! Small pieces of cutoff fall down into the grooves during scrolling. This blocks the workpiece and prevents it from being rotated. Talk about irritation! My 12" Sears has that problem and it just makes me want to scream when a piece gets botched during a rotation cut. Help!

—Mike Massey, Taylor, Texas.

You can solve this frustration, Mike. Cover the grooved table with ¼" Masonite or particleboard. Make one piece to cover both the front and back of the table. Cut a kerf slot in the piece to allow for changing the bandsaw blade. You'll have to drill holes through the table and Masonite in order to bolt the latter down. Or, use C-clamps to secure the Masonite provided they don't interfere with cutting.

Continued on page 10

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TALKING BACK

Continued from page 9

"Maple Leaf" joins "Old Glory"

In your January 1992 issue no. 49, I came across the "Grand Old Flag" project in the Craft Shop. I made one, then designed the Canadian flag from your basic flag outline. If any fellow Canadians would like to make their own "Maple Leaf," I'd be glad to send them a copy of my plans.

—John Celentino, Niagara Falls, Ont.

If you'd like to order the plans, send $2 (U.S. or Canadian) to John Celentino at 3627 Gainsborough Ave., Niagara Falls, ON L2J 2V1, Canada.

Torque "clamps" router to table

In your June 1992 issue no. 52, *page 8,* under "Weighty concerns about router table," you stated gravity holds the router in place in its rabbeted opening. That's only half correct. Yes, gravity makes the router stay in the recessed area. But, the large torque produced by a spinning router actually clamps the router in the recessed area. I doubt (although I have never tested it) that the router would fall out even if the table was turned upside down, as long as the router was spinning.

—Ed Brittain, Covina, Calif.

That would make an interesting experiment, Ed. But we'll leave it for the college physics department to demonstrate.

Found: Zircon Voltage-Metal Sensors

In your February 1992 issue you said the Zircon Voltage-Metal Sensors were available at Ace Hardware stores. My Ace dealer doesn't have any and can't get any. Can you help?

—John Cooper, Owosso, Mich.

John, until they come out with a new model, Zircon has discontinued making their Voltage-Metal Sensor. And the new one could be two years away. However, Zircon still has a couple hundred sensors left in stock at headquarters. They are $20.95 plus $5 for shipping and handling. You can order one by calling 800/245-9265. In California, call 408/866-8600.

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Sandpaper cleaner works on stones

While touching up the edges on your cutting tools, you notice that metal filings have clogged your stone. Is there some quick way to clean the stone?

TIP: Wipe the sharpening stone dry, and then clean it with the same rubber cleaning stick you use on your sanding belts and discs. Rub the cleaning block hard on the stone several times to remove sharpening residue.

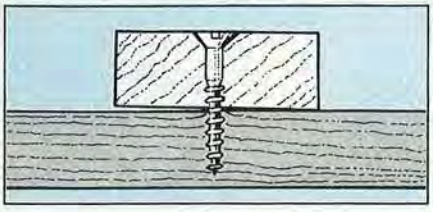
–John Hillestad, Lynden, Wash.

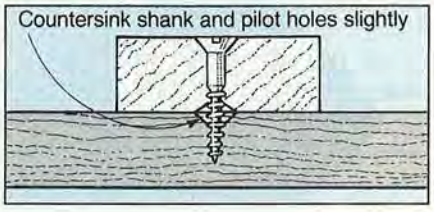
Extra countersink ensures a tight joint

After tightening the screws joining two project parts, you notice a gap between the pieces. Tightening the screws doesn't help.

TIP: Here's what happened: The screw thread pulled the wood fibers, raising a bump around the screw hole. That bump prevents the pieces from fitting closely. Here's what to do about it: After drilling the pilot hole and shank hole, countersink each slightly on the mating surface. Then, assemble the parts with a gap-free joint.

–Tom Xedos, Moreno Valley, Calif.





TOP SHOP TIP

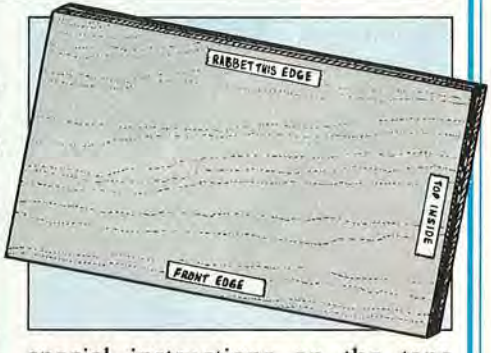
For his tip, Tom receives a Black and Decker Workmate 400, shown *right*.

Taped instructions prevent costly goofs

The large cabinet sides you've made from expensive walnut plywood look great. The dadoes and rabbets are straight as a string, and the dimensions are right on the money. Unfortunately, they're both left sides.

TIP: Masking tape can keep you from making the right cuts in the wrong places. Mark the good face, top, or back of the panels with masking-tape labels. Reminders or special instructions on the tape prevent cutting errors and also prove helpful at assembly time.

–from the* WOOD *magazine shop



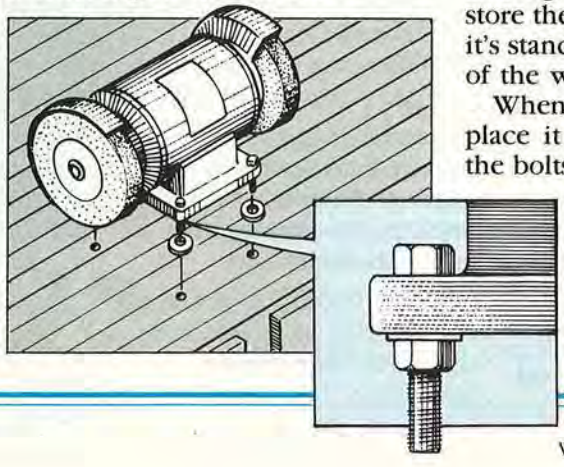
Grinder on stilts lies low between uses

Though you don't use your bench grinder often, it's bolted to the workbench, taking up valuable space. Why? Because otherwise, it wanders all over the benchtop whenever you turn it on.

TIP: Unbolt the grinder from the bench, and then insert the mounting bolts back into the holes on the machine base. Run the nuts right up to the bottom of the base, and tighten them. Now, you can store the grinder, which looks like it's standing on threaded stilts, out of the way.

When you need to use it, just place it on the benchtop, letting the bolts extend into the holes. To reduce vibration, slide a rubber washer onto each bolt before setting the grinder into place.

–Homer A. Bruno, Palmyra, N.J.



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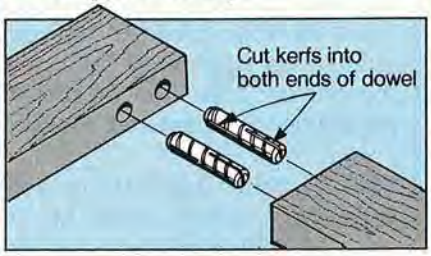
TIPS FROM YOUR SHOP (AND OURS)

Continued from page 12

Modified dowels aid dry-assembly



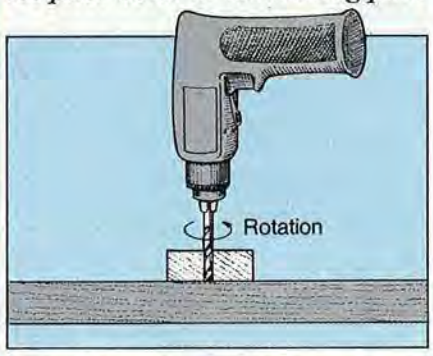
When dry-assembling a project with doweled joints, the dowels can seize in the holes, making disassembly difficult.

TIP: Test-fit parts with dowels that won't stick in the holes. Make them by sawing a bandsaw kerf about half the length of the dowel from one end. Then, from the other end, cut another kerf 90° to the first one. The modified dowels fit snugly enough to align parts accurately, but you can still remove them easily. Glue the project together with unmodified dowels.

–D. Higginbotham, Lawrenceville, Ga.

Reverse your drill when making your mark

You've already drilled shank holes for screws through a project part. Now, you must mark centers for the pilot holes in the mating part.



TIP: Align the mating parts, and clamp them together with the drilled piece on top. Then, use a drill bit the size of the shank hole to mark the centers. To prevent drilling when you only want to mark, flip the switch on your drill to "reverse." Run the drill in a short burst to make the mark.

–from the* WOOD *magazine shop

Continued on page 16

TIPS FROM YOUR SHOP (AND OURS)

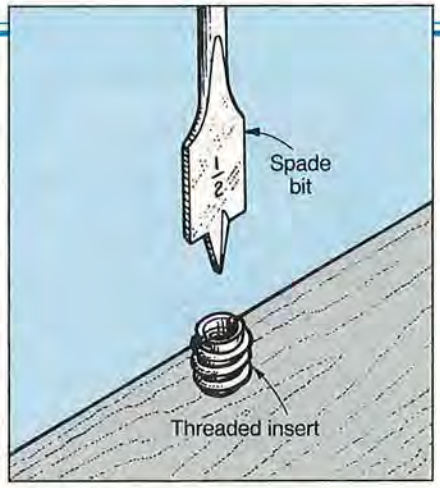
Continued from page 15

Some spadework makes a trying job easier

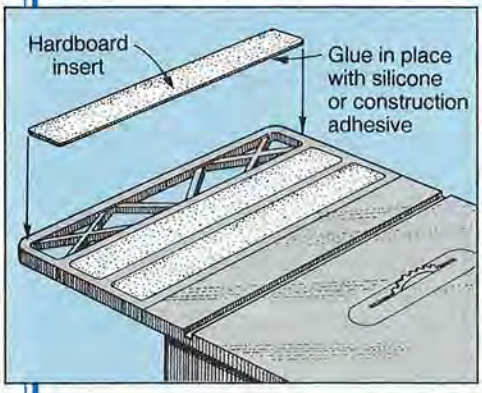
You're having a terrible time driving threaded brass inserts into ½" holes in your project. You can't guide them in straight because the screwdriver slips out of the slot, battering the insert and the wood.

TIP: Put the screwdriver aside, and chuck a ½" spade bit into your variable-speed portable drill. The cutting edge of the bit fits into the slot on the insert, and the center pilot prevents the bit from slipping out sideways. Drive the insert at a slow speed. If you use a drill press, turn the chuck by hand to drive the inserts. For other inserts, select a spade bit that matches the pilot-hole diameter.

–Thomas Kelly, Trenton, N.J.



Hardboard inserts neutralize finger-pinching extensions



Open-grid tablesaw extensions save a lot of weight and expense. The pain when you pinch your fingers between a board and a crossbar sometimes outweighs those advantages, though.

TIP: On extensions with a raised rim around the open gridwork, you can protect your fingers by covering the open areas with hardboard inserts. Select material thin enough that the insert surface will be lower than the metal table surface (¼" hardboard fits the Sears Craftsman saw illustrated). Measure the openings, and then cut a strip of hardboard for each. Sand or file the edges and corners as necessary for a snug fit, smooth side up. Glue the inserts into place with construction adhesive or silicone.

–Robert Surman, Linden, N.J.

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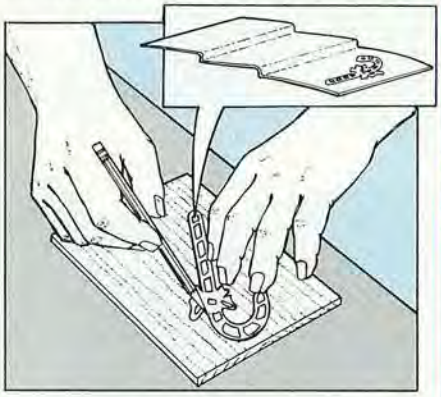
Vinyl siding scraps make lifetime scrollsaw patterns

You can trace around cardboard patterns to make copies of your favorite scrollsaw cutouts. But the cardboard doesn't last very long in the workshop.



TIP: Cut your patterns from scraps of vinyl house siding instead. It's thin, cuts easily with your scrollsaw, and stands up to a lot of abuse. You can glue a photocopy or paper pattern to it, or draw on it with pencils, markers, or pens. And you can probably get all you need free from a contractor's scrap pile (but, ask first).

–John Schwartz, Olney, Ill.

MORE TIPS FROM OUR WOODWORKING PROS

- Machine simple but strong frame-and-panel doors using our tablesaw groove-and-tenon method shown on *page 40*.
- For wobble-free shelves, use a shelf-hole template like that shown on *page 43*. It ensures that all four holes for each shelf are at the same height.
- Don't skip past *page 52* just because you don't need a rolling pin. The turning squares we used would liven up many a spindle-turning project.
- To bandsaw small projects, add an auxiliary tabletop like that shown on *page 59*. It keeps the work from falling into the miter-gauge slot and disrupting a smooth cut.

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HTC outfeed rollers: they're like a second pair of hands

Like me, you probably work by yourself during much of your shop time. So, you know what it's like when you need some assistance to rip a long board or panel with your tablesaw. I grew tired of finding someone to help me during these times, so I ordered a set of HTC outfeed rollers.

I requested a 37"-wide version for my Delta Unisaw (15"-wide models also are available). Installation took about 3 hours and required me to relocate the dust port from the back of the Unisaw to the side of the machine (not necessary on newer Unisaws).

Once in place, the rollers worked perfectly, and my workpieces tracked over them with no deviation in direction. The accessory has an innovative cam action that allows me to effortlessly lower the rollers ⅜" when my miter-gauge bar extends past the saw table. When I'm through working, I just fold down the roller assembly, freeing up shop space.

After several months of use, the well-built unit has proven itself durable and reliable. I have every reason to believe it will last the lifetime of the saw. For saws that have a motor hanging out of the back, such as a Delta Contractors Saw, HTC makes a version with an attached mobile base that sells for approximately $100 more.

—Tested by Jim Boelling

HTC outfeed rollers for 10" cabinet-style saws, $288 from HTC dealers nationwide. For more information, call HTC Products at 800/624-2027 or 313/399-6185.

Continued on page 20

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The Regular Price for the Model 340 is $795. While these special quantities last, you can get one for only $695. Shipping is a flat $25 to anywhere in the 48 states. (Inquire about HI and AK.)

As an added dividend, we'll send you the book, the Cool Blocks®, a ¼" and a ½" blade, (a $50 value) absolutely *FREE* with your order.

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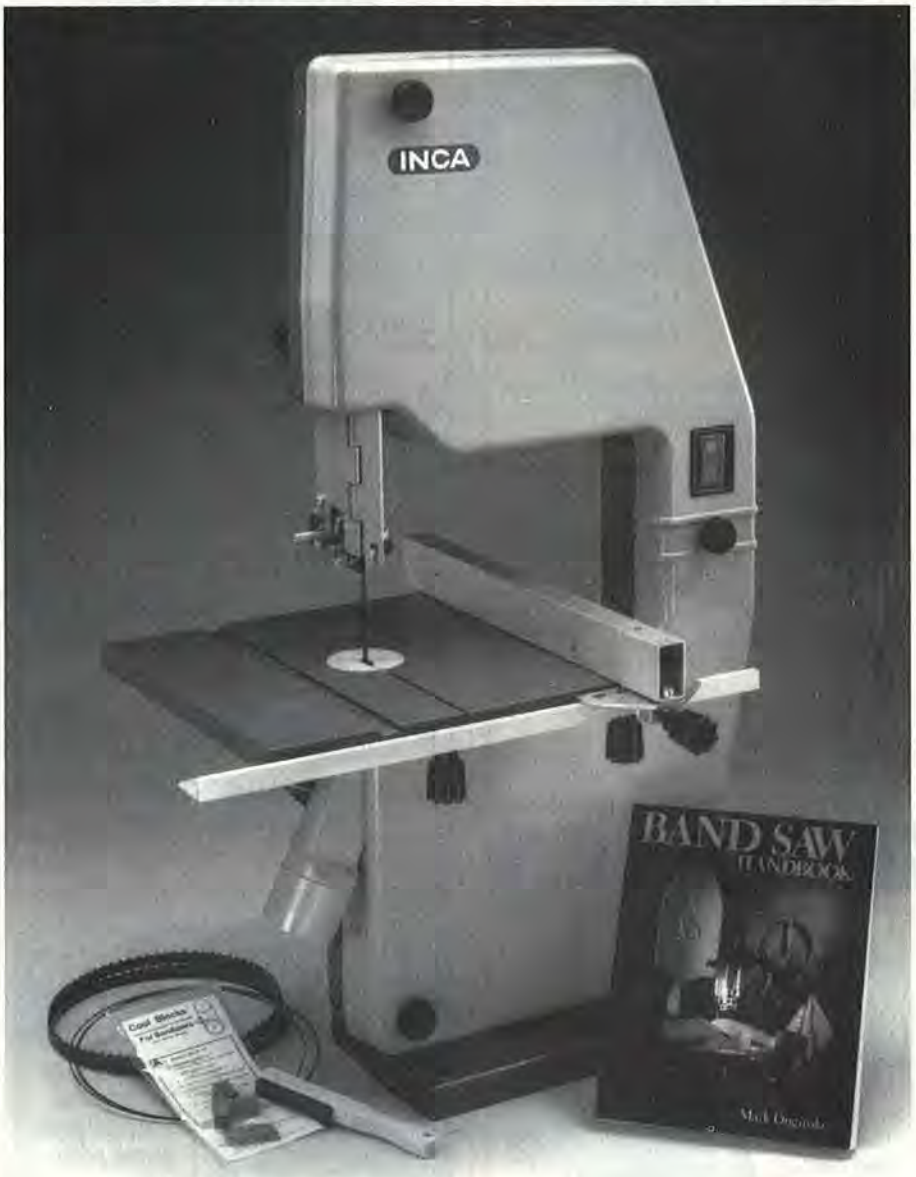

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PRODUCTS THAT PEFORM

Continued from page 18

A low-cost circular blade that cuts fast and smooth

For a lot of tasks, such as construction work or projects that don't demand a smooth cut, it makes sense to use a low-cost blade. That way, if the blade hits a nail, or you drop it, or even leave it out in the rain, you won't be out too much money. The Mach 1 blade from Sears fits into the low-cost category ($11–$19 for 7¼" models and $20–$30 for 10" versions). In my tests, this blade delivered fast, smooth cuts, despite its low price tag.

The blade's thin-kerf design helps it power through thick stock without slowing the motor. And I consider it the ideal blade for my 7¼" portable circular saw. The 10" versions will probably handle most of your tablesaw and radial-arm saw work. But, for the best possible results, I suggest you use blade stabilizers to stiffen the blade body. When I need a really smooth cut, I'll opt for one of my higher-quality blades.

On the downside, the blades' unique design results in debris buildup at the base of each tooth as shown in the photo *above*. This didn't seriously hamper my results, but I did have to clean it out from time to time. The blade has relatively small carbide teeth, so you're not going to get a lot of sharpenings out of it. For the cost of these blades, I don't consider these serious drawbacks.

—Tested by Bob McFarlin

Sears Mach 1 circular blade, available in various sizes at Sears stores and telecatalog centers.

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25"x75"	13.56	20.13	20.88	22.00
36"x75"	19.53	28.98	30.06	31.68
37"x60"	17.46	25.23	26.12	27.45
37"x75"	20.07	29.79	30.90	32.56
50"x103"	33.71	51.73	53.79	56.88
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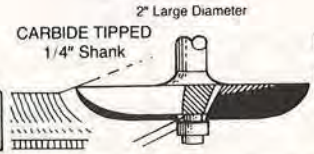

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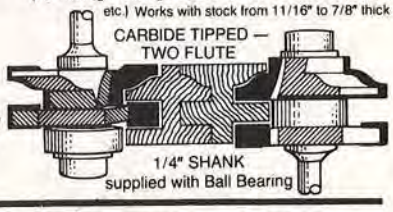

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#207		1/2" Cove	1/2" R	1 1/2"	5/8"	1/4"	$14.00
#643		1/2" Cove	1/2" R	1 1/2"	5/8"	1/2"	$15.00
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#213		1" Core Box	round nose	1"	3/4"	1/2"	$17.00
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#558		Thumbnail		13/16"	3/8"	1/4"	$18.50
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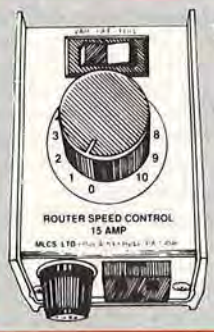

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BUTTERNUT

Walnut's kissing cousin

Most all woodworkers have heard of revered and costly black walnut, even if they might not have worked it. On the other hand, butternut—although a walnut, too—remains scarcely recognized as quality stock.

In fact, butternut has more renown as a nut producer than as a woodworking wood. Ever since the pioneer days, people have gathered its sweet, oily nuts with relish each fall. Early Americans also knew butternut as a dye. "Butternut jeans," homespun overalls dyed brown in the juice of butternut husks, were a common sight. And, like the hard maple, the tree was even tapped for its sweet sap, which was processed into syrup.

Historically, though, carvers have always made the most use of butternut as a highly desirable wood. Its straight grain and softness translate into easy carving. For that reason, many intricately carved church altars turn out to be butternut.

Wood identification

Butternut (*Juglans cinerea*), also known as white walnut and oil nut, grows in a northern range from southern New Brunswick in Canada to the North Carolina mountains and west to eastern Minnesota. The tree never appears in stands, but occurs sparsely in rich, moist bottomland soils.

A medium-sized tree, butternut generally grows 30–50′ in height and to a trunk diameter of 1–3′. But in prime forest conditions, it can reach 80–100′ and diameters of 4′. For instance, the largest butternut on the National Register of Big Trees stands 88′ tall.

At a distant glance, butternut resembles black walnut in shape, although it never grows as tall and tends to spread more. And the bark has a gray color instead of the dark brown of black walnut.

The alternate, frondlike leaves are 15–30″ long and have as many as 17 pointed leaflets, that on the underside, are sticky to the touch. Butternut trees produce oblong nuts with thick, leathery husks and sweet, oily kernels that squirrels love. The nuts drop simultaneously with the leaves in the the fall.

Butternut's coarse, straight-grained wood features a light tan color and a beautiful luster. At 27 pounds per cubic foot air-dried, butternut weighs less than black walnut. It's also softer, less durable, and not as strong. In stability, the two are equal

Uses in woodworking

Butternut often becomes carved furniture and mantelpieces, as well as relief, figure, and sculptural carvings. Stained, it imitates walnut in furniture and paneling. Where it's plentiful, the wood becomes cabinets, molding, boxes, and crates. Even wormy butternut, which turns up on occasion (see next page), may prove worthy for use in certain projects, such as relief carvings or boxes.

Natural range

Availability

Because today few woodworkers other than carvers demand butternut, it may be difficult to obtain except at large hardwood lumber dealers located within its range. But specialty suppliers catering to turners and carvers frequently offer butternut blanks.

When you do find butternut stock, the boards usually won't run extra wide or long due to the lack of large, clear logs. This factor also contributes to butternut's relatively high cost—about $3 per board foot for select and better. Butternut veneer or plywood generally isn't available at retail because it is only made for the architectural trade.

Continued

PERFORMANCE PROFILE

butternut

(Juglans cinerea)

Butternut

Butternut wood sometimes turns out to be wormy, the work of powder-post beetles and their larvae. Such damaged wood can be used for attractive projects, as long as the varmints aren't still working! Kiln-drying usually solves any potential problems, and a thoroughly applied, tough finish guarantee's any survivors' demise, but it pays to closely observe all wormy wood for pests before buying.

Machining methods

Butternut works more easily than black walnut with hand and power tools because the wood ranks lower in all strength properties than its cousin. That's a plus, but also a caution. Butternut's softness makes it more susceptible to nicks and dents as you work the wood. And there's more to keep in mind:

- Although black walnut dust can irritate the eyes, butternut doesn't have that tendency. But as with all woods—especially hardwoods—wear a dust mask when doing fine sanding.
- The wood's coarse grain requires care when jointing or planing to avoid tearout. Make several shallow cuts to remove wood instead of one deep one.
- Attach a backing board to the miter fence to act as a chip breaker when crosscutting.
- Butternut, due to its softness, shouldn't burn when routed, but shallow passes eliminate any possible tearout or chipping.
- You won't have any problem gluing butternut—its coarse texture draws in adhesives, ensuring a strong bond.
- Butternut accepts all types of stains (you can even stain it to pass for black walnut) without filling first. But the rich tan wood may look best with a more natural clear finish.
- Although oil finishes prove popular on butternut carvings, you can improve the wood's natural luster by first burnishing it (rubbing the wood with the back of a spoon, gouge, or glass bottle to compact the surface of the fibers for more sheen).

Carving comments

Butternut is a favorite of relief carvers because it takes fine details and finishes to a beautiful luster. But to avoid warp on large works, edge-join two or three pieces rather than use a single board. Also, keep these other tips in mind:

- In a relief carving, carve the sapwood side of the board to reduce any tendency for it to warp or cup. Look at the growth rings visible in the end to locate the sapwood side. The larger rings will be on what was the outside of the tree.
- Be cautious when taking deep cuts along the straight grain as the wood may pop or tear out.

Turning tricks

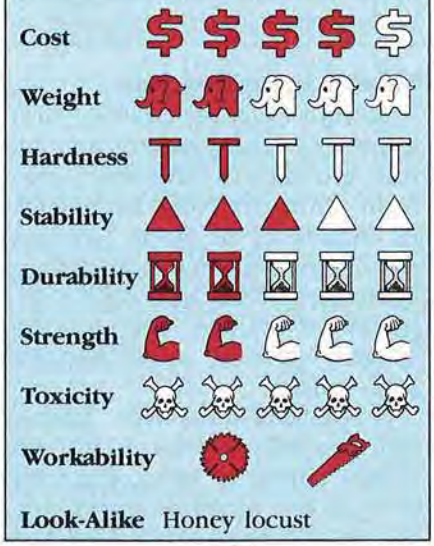
The coarse grain of butternut, and its softness, requires sharp tools. For best results, turn butternut at a lathe speed of 800-1,000 rpm.

SHOP-TESTED TECHNIQUES THAT ALWAYS WORK

Any exceptions—and special tips pertaining to this issue's featured wood species—appear under headings elsewhere on this page.

- For stability in use, always work wood with a maximum moisture content of 8 percent.
- Feed straight-grained wood into planer knives at no angle. To avoid tearing, feed wood with figured or twisted grain at a slight angle (about 15°), and take shallow cuts of about 1/32".
- For clean cuts, rip with a rip-profile blade with 24–32 teeth. Smooth cross-cutting requires at least a 40-tooth blade.
- Avoid drilling with twist drills. They tend to wander and cause breakout. Use a backing board under the workpiece.
- Drill pilot holes for screws.
- Rout with sharp, preferably carbide-tipped, bits and take shallow passes to avoid burning.
- Carving a soft hardwood like butternut means fairly steep gouge bevels—greater than 20°.

BUTTERNUT AT A GLANCE



Look-Alike Honey locust

Compiled with woodworker Jim Boelling and carver Jim Rose Illustration: Steve Schindler

SHOOT-OVER DECOYS

On Virginia's Eastern Shore, carver and wildfowler Grayson Chesser, Jr., blends knowledge and talent to create what hunters want

The son and grandson of wildfowlers, Grayson Chesser, Jr., first shot birds over decoys at age 12. By the next season, he had made his own crude decoys. It wasn't until after college, though, when he returned to the family farm on Virginia's Eastern Shore, that he began carving in earnest.

"In the early seventies, when I seriously started carving hunting decoys, most people thought I should be doing decorative, mantel-top ones," recalls Grayson, 46. "But I didn't want to do that."

Grayson, who once served as a game warden, and then as a hunting guide, to supplement farm income, wasn't discouraged. "In 1976, I added a shop and sold a dozen teal ducks I'd made to buy a bandsaw. Then, my carving was bringing in $1,500 a year. Next it became $7,000. Before long, I was making all my living carving, but I was still farming. I said, 'This is crazy,' and quit farming."

Now, Grayson's birds fetch $150 and more. And he sells all he makes. When he's not carving in his shop at Jenkin's Bridge, he's swapping rare old decoys with other traders.

Continued

WILDFOWL hunting was born as a shooting sport along the Eastern Shore, the long, narrow neck of land shared by Maryland and Virginia. During the 1800s, ducks and geese by the hundreds of thousands passed through in their annual migrations. The sheltered inlets and marshes around the Chesapeake Bay, as well as the sea of wetlands spanning the barrier islands on the Atlantic side, offered food and protection to the transient flocks.

Farmers and fishermen alike hunted the fowl to boost their modest living. Many sold their game at markets. Others guided city gentlemen into the wild for princely sums.

But back then, hunters measured success in quantity. And to guarantee a good shoot, some Eastern Shore guides and hunters carved likenesses of ducks and geese to lure birds within gun range. That deception still intrigues carver Grayson Chesser.

Decoys for the birds

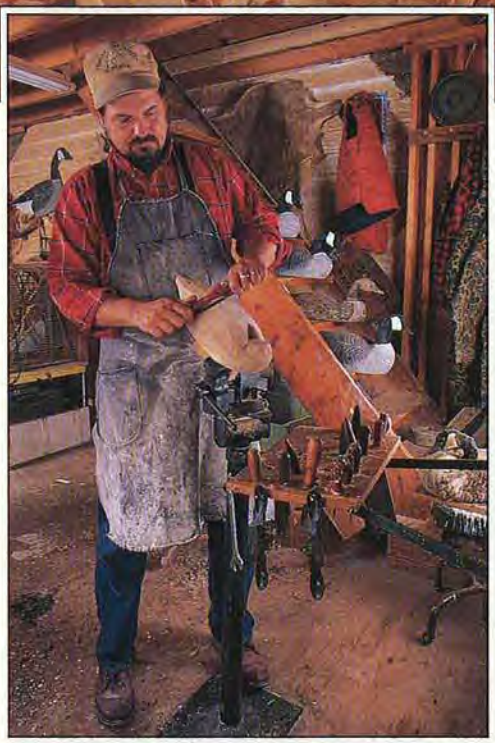
During the last 30 years or so, carved, decorative decoys have become an art form. The intricately detailed, lifelike birds also command price tags reaching the thousands of dollars. Yet, Grayson pays them little attention. He prefers the gunning decoy.

"The trouble with those decorative birds is that they get so much detail that your eye gets hung up on it, and you don't even see the bird," he says, arms crossed on top of the rough body of a decoy lying on his workbench. "That's why decorative carving doesn't appeal to me much at all."

Instead, Grayson looks to the work of past masters, often hunters like himself, who relied on their carvings to help put food on the table. "The most valuable decoys I have are some of Nathan Cobb's, including one that would bring $20,000 to $25,000," he notes. "Nathan Cobb carved into the 1890s, and as far as I'm concerned, he was the best. His decoys are very simple—no detailed painting at all. But if you know birds and you look at his decoys, you know they have movement to them. You know what they're doing—feeding, resting, preening." So it is with Grayson's birds.

Duck hunters call a collection of decoys a *rig*. It might consist of five ducks or five dozen or more, depending on what the hunter wants to shoot and where he's hunting. And according to Grayson, it's the appearance of the rig, not the individual decoys in it, that attracts wildfowl.

In a marsh close to the Chesapeake Bay, Grayson tosses out a convincing display of decoys. He carved the green-winged teal and mallard drakes in the foreground in sleeping poses. Others feed or contentedly swim.



A spokeshave and a Surform rasp are the only tools Grayson needs to quickly round off a rough decoy.

The notched platform on the decoy body will accept a resting head, one of many head types Grayson uses in a rig.

With a carving knife, Grayson makes the stop cut that outlines the decoy's tail feathers on the paulownia body.

"You have to think of your decoys as a small duck community, with room for strangers to move in," he says, tugging at his cap brim. "The rig imitates duck life."

One look at a Chesser rig shows that the quiet-spoken outdoorsman knows what he's talking about. What passing duck, for example, could resist the domestic scene assembled by Grayson in the photo, *opposite page*. From 30 yards even an experienced hunter might be deceived into thinking he'd stumbled onto a congregation of contented wildfowl.

"I think of decoy rigs as boxers—a little one will seldom beat a big one," says Grayson. "But it's all determined by location and species—like on small ponds for mallards, you don't need a whole lot. Four or five."

That knowledge comes from knowing ducks. And Grayson can rattle off the needs and peculiarities of all the species—redheads, eider ducks, mallards, widgeons, teal, buffleheads, goldeneyes, you name them.

How Grayson gets his ducks into shape

Old-time Eastern Shore carvers favored white cedar (also called juniper) for their decoys. But, according to Grayson, salvaged ship masts, usually of white pine, became decoys, too. Today, though, white cedar large enough for decoy bodies isn't plentiful in Maryland or Virginia, and there are no sailing ships to go aground. So, white pine from the northern states usually gets the nod. "I also use some paulownia—that's about the only type of wood growing here that's light and durable enough for decoys," he notes. For heads, only durability counts, so Grayson looks to harder woods like white pine or sugar pine, and sometimes paulownia.

A lifesized decoy (actually, a bit oversized) begins as a block of wood, the dimension varying a little by species. A mallard blank, for instance, measures about 4×8×15". "The block has to be just a bit bigger than the pattern so the bandsaw blade don't run out," he advises.

The sharp definition of gathered wing feathers on the decoy's back requires a cut with a backsaw.

Grayson draws a top view of the bird's shape on what will be the bottom of the decoy. Then, he pencils a profile on the side of the block. At the bandsaw, he first saws the profile, and then turns the wood so the freshly sawed side faces down, and saws the bird to shape. The head comes from a separate piece of wood, and it, too, gets its rough shape under the blade of the bandsaw.

"After I saw the body to shape, I screw a block on the bottom so I have something to put in the vise to hold it," says Grayson. "From there on, it's all handwork." With a spokeshave and a Surform (a half-round rasp), he rounds and smooths the duck, as shown in the photos, *left*.

Grayson also uses a carving knife, backsaw, and a fish-tail chisel to cut in details such as eye hollows and wing/tail separations. The carving and cutting completed, it's time to sand.

"The most time I'll have in a decoy is about six hours," he says. "That's not including the paint-

Continued

ing. The sanding takes a lot of time—you aren't doing anything creative when you're sanding."

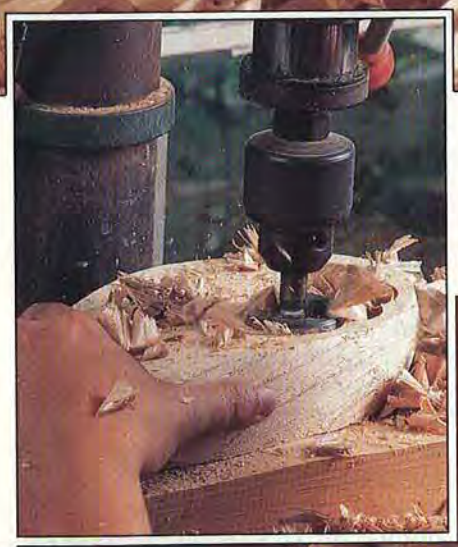
Following the sanding, a decoy destined for shallow-water use will be hollowed out. (See the tips box, *below right*, for why Grayson hollows some decoys.) To do this, the apron-clad carver saws the decoy lengthwise into top and bottom sections. The bottom section actually equals more than half because he doesn't want the glue joint at the waterline. Then, with a Forstner bit chucked into his drill press, Grayson bores out the insides of each section, as shown *top right*, leaving about ¾" of wall in the decoy body.

Rigs to ride the waves

With the decoy now hollow, Grayson can attach the head. "I fasten the head with glue and a lag screw from inside the hollow decoy through the top half of the body," he explains. "Then, I spread resorcinol glue around on the body joint, put the halves together, and fasten them securely with galvanized finishing nails driven in from the bottom." The decoy is now ready to begin looking like a duck.

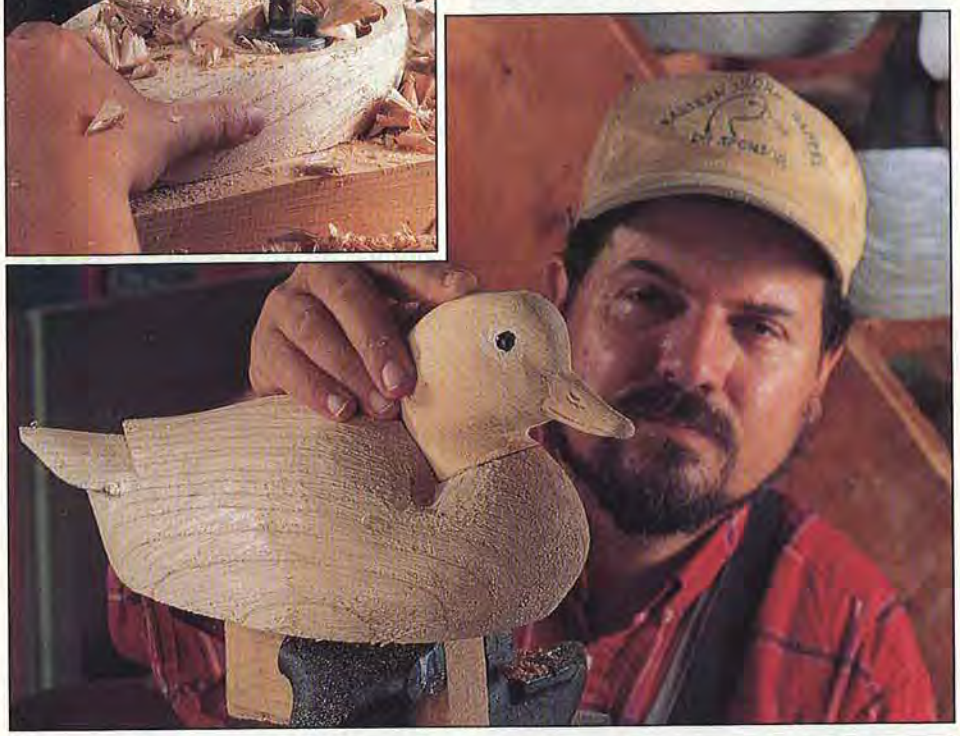
Because fine detail has little to do with being able to fool live ducks or geese, Grayson skips it. Instead, like caricatures, his decoys emphasize distinctive body features, such as head position and color of a species.

"Some of the great decoy carvers of the past were good painters; some weren't. But their birds all worked," notes Grayson, who without a doubt belongs in the first category. After all, he believes, ducks passing over a rig at 40 mph don't count the breast feathers on the decoys. But they do want them to look like relatives.



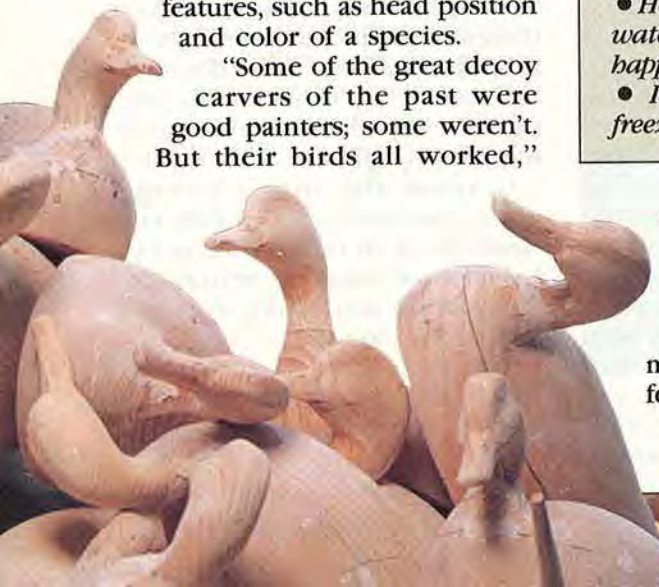
◀ **Hollow decoys ride better in shallow water, so Grayson bores out each half of the decoy with a Forstner bit.**

▼ **Even without paint, a canvasback duck would recognize this decoy as one of his own kind.**

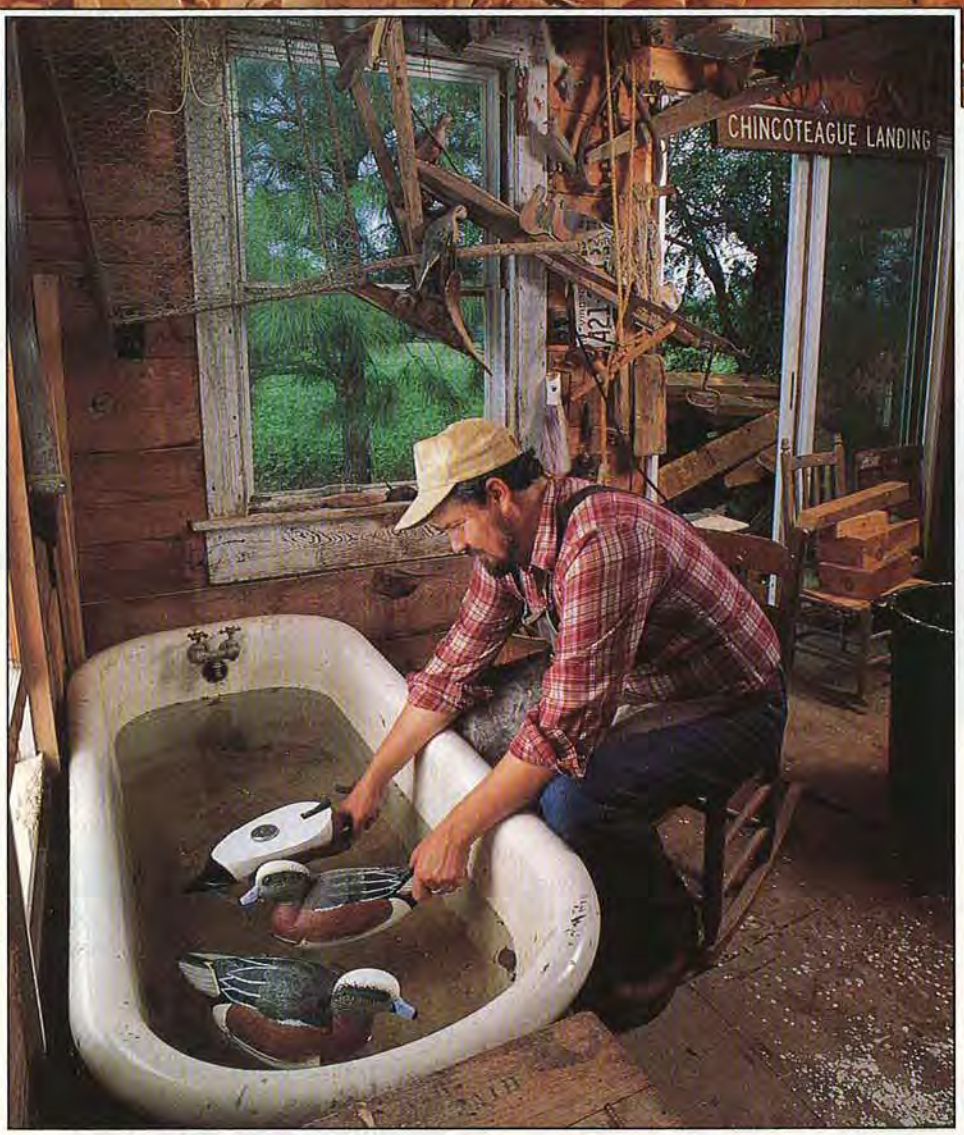


More Grayson Chesser decoy wisdom

- *Use hollow decoys on shallow, sheltered water. Solid decoys ride better in deep, rough water.*
- *Because the shape and color of a duck's head usually represents its species, make it slightly large for quick identification.*
- *Heads with bills parallel to the water or slightly dipping indicate happy ducks.*
- *In the northern states where it freezes during duck season, don't use decoys with steeply lowered bills because ice will form at the tips for a quite unnatural look.*
- *Set out decoys with open spots within the rig, giving ducks inviting places to land.*
- *Add 1×2" keels to the bottoms of decoys that will be used in water with a current, such as a river.*
- *A few goose decoys added to a duck rig inspire confidence to land in ducks passing overhead.*



For finishing his wildfowl, Grayson likes oil-based paints. In fact, he uses Rustoleum, a rugged brand of outdoor paint that's available at most hardware stores. For softness, and to avoid the look of newness, he mixes in a few squeezes of artist's oil colors (the kind in tubes) with the canned



An old bathtub serves as a test tank for working decoys. Grayson adjusts the lead weights on the bottom of the birds until the decoys float without listing.

paint. Rustoleum also serves as a wood sealer, and he gives each decoy two base coats prior to adding the finishing colors.

After painting, a decorative carver's work would be finished, but not Grayson's. He still has to float his ducks.

"How it's going to float depends on where you put the weight," Grayson says, kneeling next to the dusty, discolored, claw-foot bathtub in a workshop corner, as shown *above*. "It also depends on the decoy's design—the wider the bottom, the higher and more stable it'll float."

"Sometimes, they'll float okay without doing anything more," he continues, "but often the wood is denser on one side. Or, the head position can throw it off."

The purpose of weighting a decoy is twofold. First, it must ride naturally in the water. Second, it must right itself immediately if it turns over in the wind or after it is tossed into the water by the hunter setting the rig.

Grayson's weights—made from heated lead poured into the bottom of a muffin-tin mold—feel about as heavy as silver dollars. He attaches them with brass screws (one to a decoy) to the bottom of the wooden birds. And it's in the bathtub that he discovers just where to attach them.

"See here," says Grayson, flipping a widgeon drake into the water, "that rubber band around the body holds the weight while I'm testing. I just move the weight around until the decoy rides right, then I fasten it in place."

Grayson picks the widgeon from the water and stands up. "Now, after I add anchors and lines, I can ship this batch off." He rolls down his shirtsleeves and buttons the cuffs. "I've got a dozen-and-a-half pintails to do for a guy in North Carolina," he murmers almost to himself. "He's a darn good regular customer."

Care to price Grayson's decoys?

Write to:
Grayson Chesser, Jr.
Rt. 695
Jenkin's Bridge, VA 23399.
For more about crafting working decoys, read: *Making Decoys the Century-Old Way*, by Grayson Chesser, Jr., and Curtis J. Badger, 1989, Stackpole Books, Harrisburg, PA, $24.95.

Written by Peter J. Stephano
Photographs: Steve Uzzell

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If you're searching for a straightforward way to make and install sturdy, smooth-sliding drawers that look great, stay tuned. We'll show you how to build dovetailed drawers steered by a simple and inexpensive wooden guide system.

As we sat down to plan this article, we carefully considered the nearly endless options for building a drawer. Eventually, we decided on strong, traditional, ½" half-blind dovetails for joining the sides of the drawer to the front. Any number of commercially available jigs help you make these joints with your router, and we'll share some tips for using them.

To make carcase construction and drawer installation as straightforward as possible, we chose to rest the drawers on ¾" plywood panels. The panels simplify guide installation and make great dust barriers between the drawers.

Let's take an inside look at a basic drawer system

The traditional dovetailed drawer and its cabinet support system must truly be made for each other for effortless operation and a long life. Note, for instance, the key components shown at *right*.

The ***drawer*** has two ½" ***sides*** joined to the ½" or ¾" ***front*** with half-blind dovetails (so named because you can't see the joint from the front of the drawer). Rabbet-and-dado joints hold a ½" ***back*** to the sides, and a ¼" plywood drawer ***bottom*** slips into a groove cut into both sides and the front. Note that the sides extend beyond the back to prevent the drawer from dropping to the floor when fully opened.

Fastened to the underside of the drawer bottom are two ¼" ***slides*** that contact both sides of a ¼" ***guide*** attached to a ¾" panel beneath each drawer. Together, these parts make up a guide system that channels the drawer straight in and out when pushed and pulled. The guide also serves as a stop that prevents the drawer from striking the back of the carcase when you close the drawer.

A ***kicker*** prevents the drawer from tipping down as you pull it open. You may not need a kicker if the drawer has a ¾" panel just above it. (See the Shaker-style Tall Chest project on *page 38* for examples of drawers that do not need kickers.)

Note: *Use a moderately priced, close-grained hardwood such as beech, birch, soft maple or poplar for the drawer sides, back, slides, guides, and kicker; hardwood plywood for the bottom; and drawer fronts that match the cabinet.*

How to size your drawers

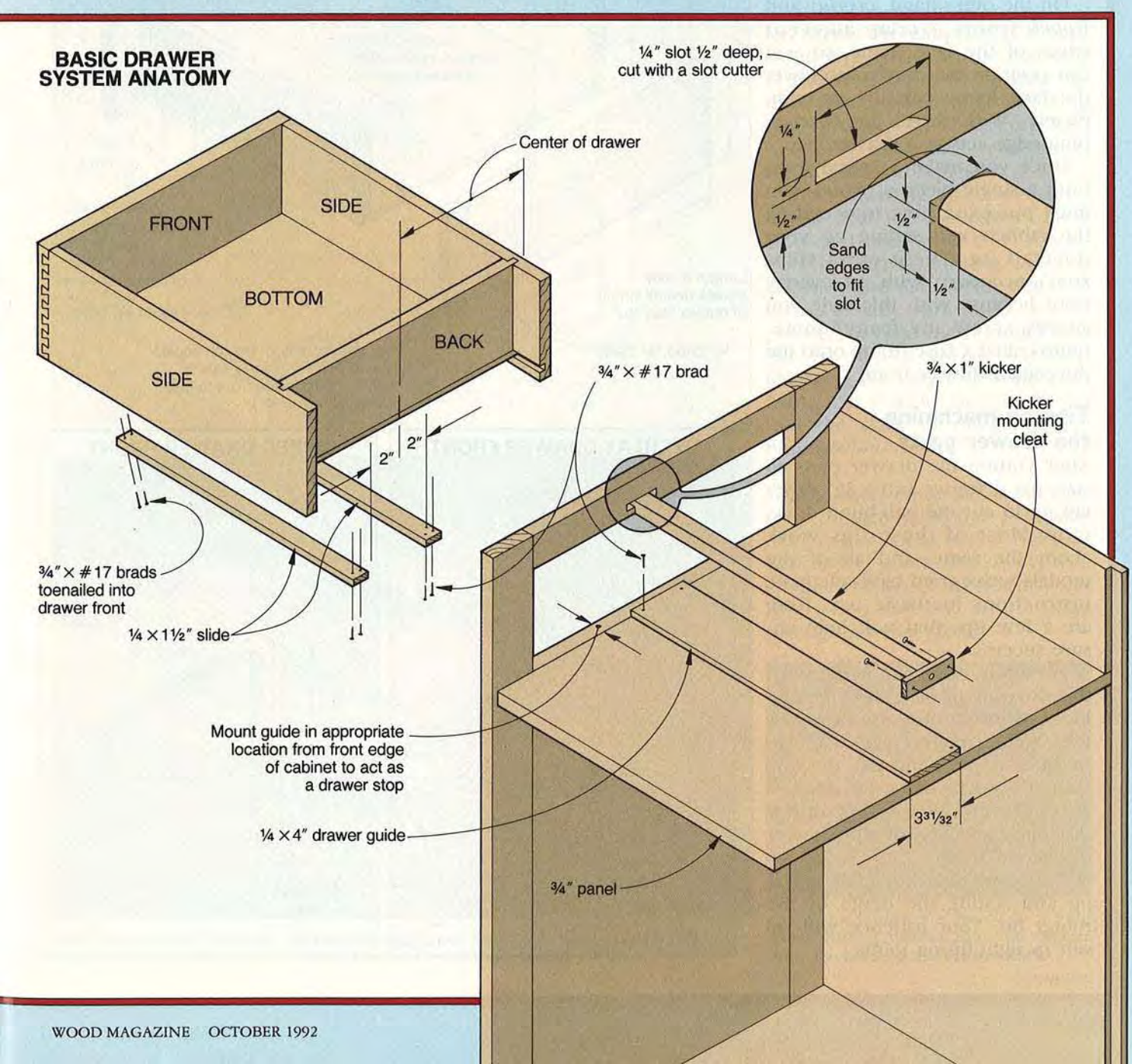
Note: *With this type of drawer construction, you need to determine the drawer height when you're planning the cabinet.*

Before you cut the parts for your drawer, you need to decide which of three drawer-front styles to use for your project—flush, lipped, or overlap. Though your decision is mainly one of aesthetics, each style functions slightly differently and also affects the dimensions of some parts. The drawings on *page 32* show and tell how to determine the dimensions of the various drawer parts.

Continued

MAKING AND INSTALLING DOVETAILED DRAWERS

IT'S EASIER THAN YOU MIGHT THINK



DOVETAILED DRAWERS

In this article, we'll construct a drawer with a *flush* front that does not protrude from its surrounding carcase. These fronts make for easy drawer construction, but do require you to carefully fit them and accurately position the drawer guide.

On the other hand, *overlay* and *lipped* fronts overlap adjacent edges of the face frame, so you can position the drawers to cover the face frame partially or completely. With these, the overlapping edge acts as a drawer stop.

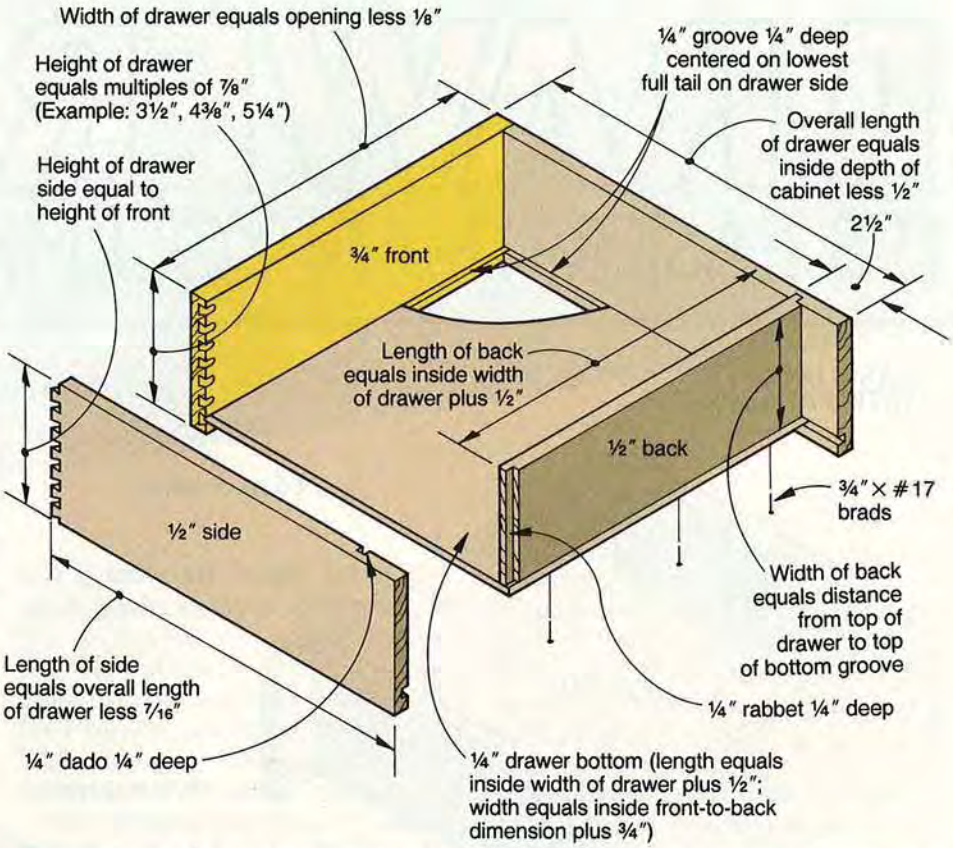
Since you make a lipped front from a single piece of wood, you must put extra time into cutting the rabbets and setting up your dovetail jig. These extra steps aren't necessary with an overlay front because with this style you simply screw the front (sometimes called a false front) onto the dovetailed drawer front.

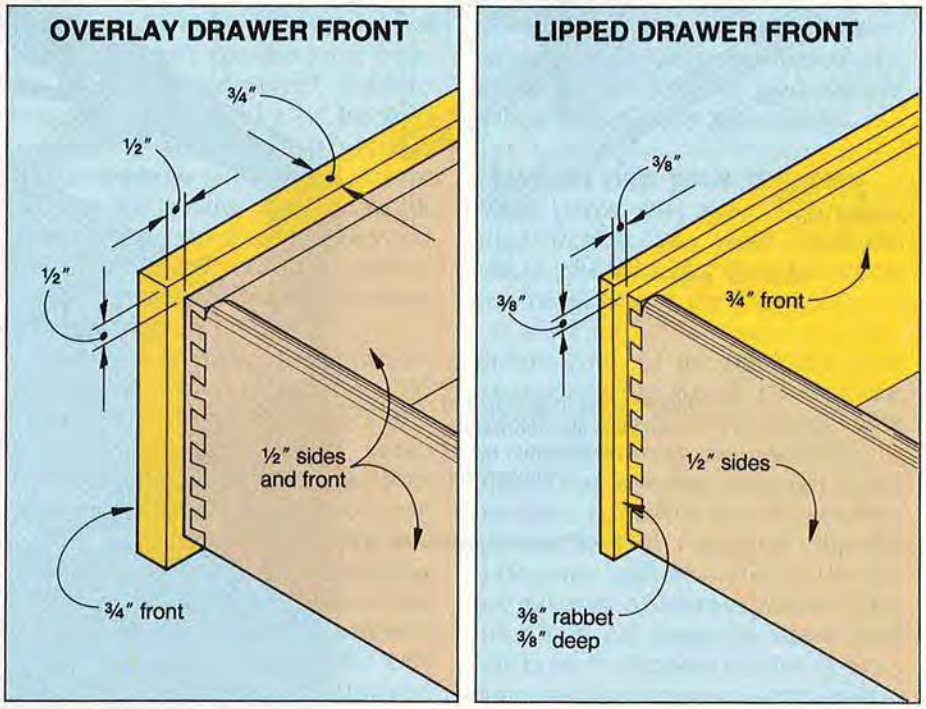
Tips on machining the drawer parts

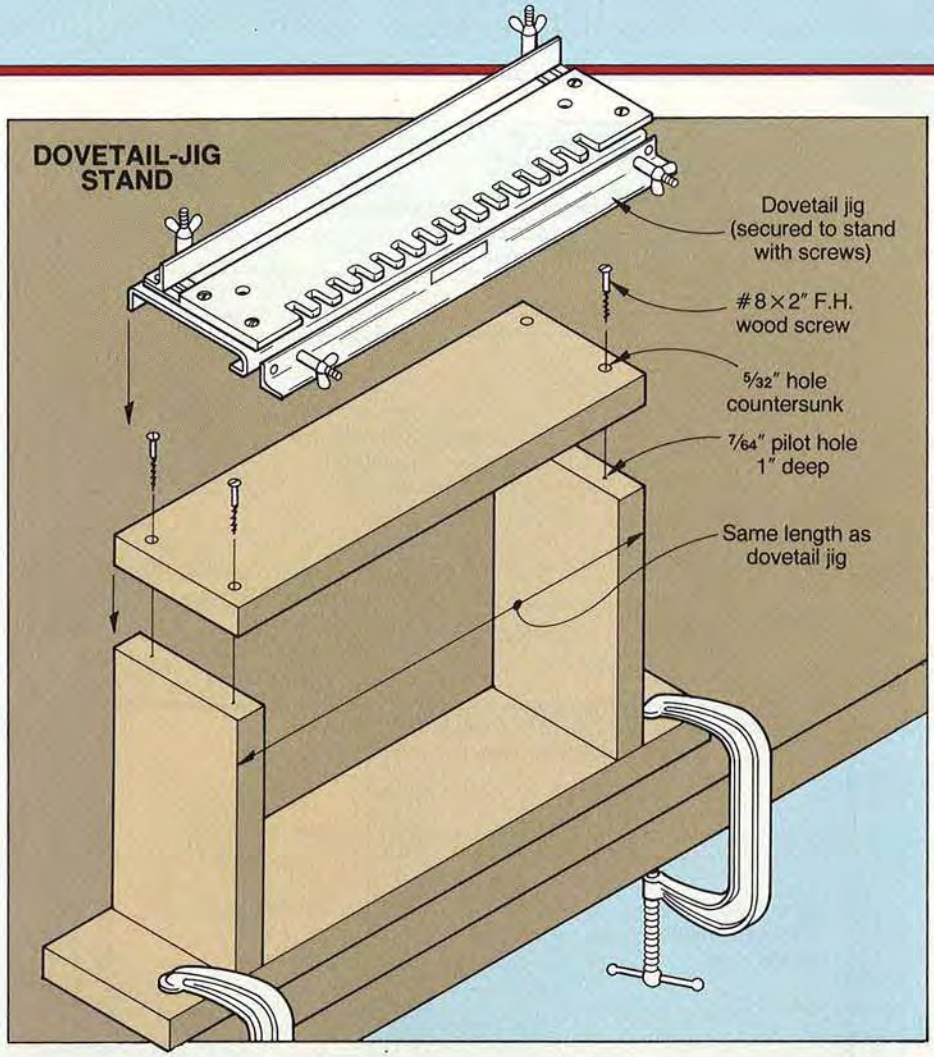
After cutting the drawer parts to size, use a router and a ½" dovetail jig to cut the half-blind dovetails. Most of these jigs work about the same, and all of the models we've tried have adequate instructions for basic use. Here are a few tips that will help ensure success:

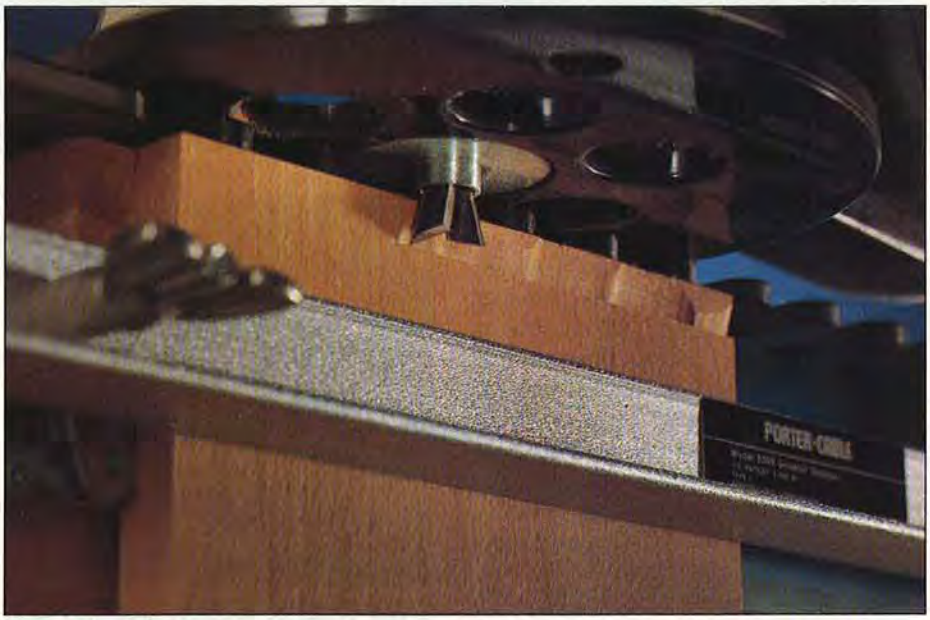
- For your comfort, work with the dovetail jig at elbow height. Most workbenches don't reach this high, so you may want to build a simple stand like the one shown *opposite* using ¾" stock.
- To prevent mix-ups, number the mating edges of the drawer fronts and sides.
- Take your time in adjusting the jig and setting the depth of the router bit. Your patience will result in tight-fitting joints.

SIZING A DRAWER
(Flush-front style shown)


Width of drawer equals opening less ⅛"
Height of drawer equals multiples of ⅞" (Example: 3½", 4⅜", 5¼")
Height of drawer side equal to height of front
¼" groove ¼" deep centered on lowest full tail on drawer side
Overall length of drawer equals inside depth of cabinet less ½"
2½"
¾" front
Length of back equals inside width of drawer plus ½"
½" back
¾" × #17 brads
½" side
Width of back equals distance from top of drawer to top of bottom groove
Length of side equals overall length of drawer less 7/16"
¼" rabbet ¼" deep
¼" dado ¼" deep
¼" drawer bottom (length equals inside width of drawer plus ½"; width equals inside front-to-back dimension plus ¾")




DOVETAIL-JIG STAND
Dovetail jig (secured to stand with screws)
#8×2" F.H. wood screw
5/32" hole countersunk
7/64" pilot hole 1" deep
Same length as dovetail jig



Before cutting the dovetails, make a skimming cut to help prevent grain tearout. Make light cuts, but hold the router firmly to maintain control.

- If you properly cut your dovetailed parts, you need only tap them together gently with a rubber mallet. If they fit with any play, they won't hold up in the long run. If they're too tight, you could break them when forcing them together.
- To reduce the chances of grain tearout, make a skimming cut across the inside face of the drawer side (vertical workpiece) by running the router from right to left across the template as shown *below left*. Then, cut the dovetails to their full depth by moving the router from left to right, following the notches in the template. Check to make sure you've cut the dovetails completely.

After cutting the dovetails, round over the top edges of the sides and back with a ¼" roundover bit. Then, turning to your tablesaw and dado blade adjusted for a ¼"-wide kerf, cut a ¼×¼" groove (to hold the bottom) into the front and sides. Without changing the height of your dado blade, cut a dado (for the back) into the sides as shown in the photo *below right*.

Safety note: *Since we're not cutting completely through the workpiece in the photo* below right *we can safely butt the workpiece against the fence. Do not attempt this when cutting all the way through narrow pieces.*

Use your tablesaw's fence as a stop when cutting dadoes into the drawer sides for holding the drawer back.

Continued

DOVETAILED DRAWERS

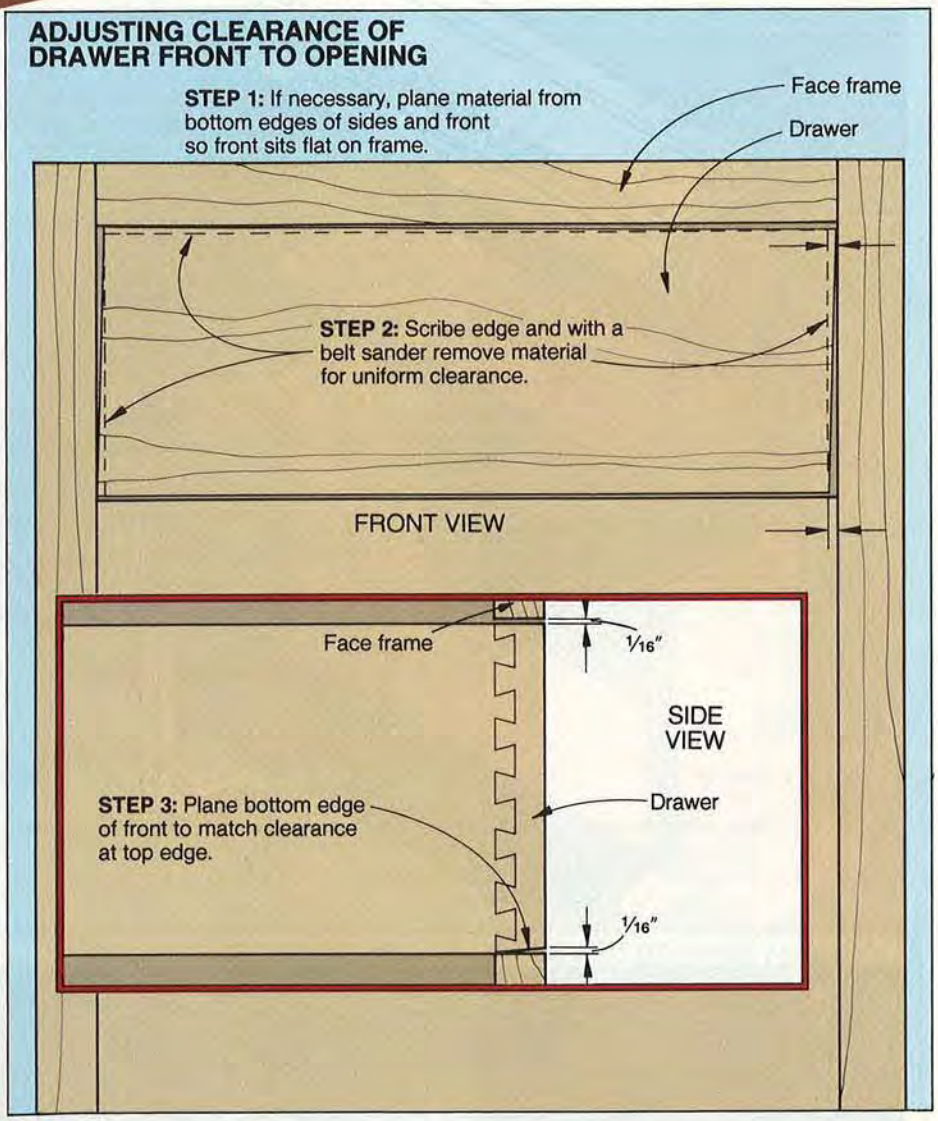
Now, slide the tablesaw fence up to the dado blade and cut the rabbets on the ends of the back. To prevent damage to your fence, clamp or screw a wooden auxiliary fence to it.

Let's assemble the drawer

Before applying glue to the parts, dry clamp the drawer together to check for fit and squareness. Then, apply woodworker's glue to both surfaces of the dovetail joints (a ½"-wide brush works well), and to the rabbet-and-dado joints. Attach one side to the front and back, and then attach the other side. Clamp this assembly together as shown *below*. Check the drawer for square by measuring across both diagonally opposing corners. If one diagonal measures longer than the other, adjust your clamps until the diagonal measurements equal one another. Make certain that the drawer back does not block the groove that holds the drawer bottom.

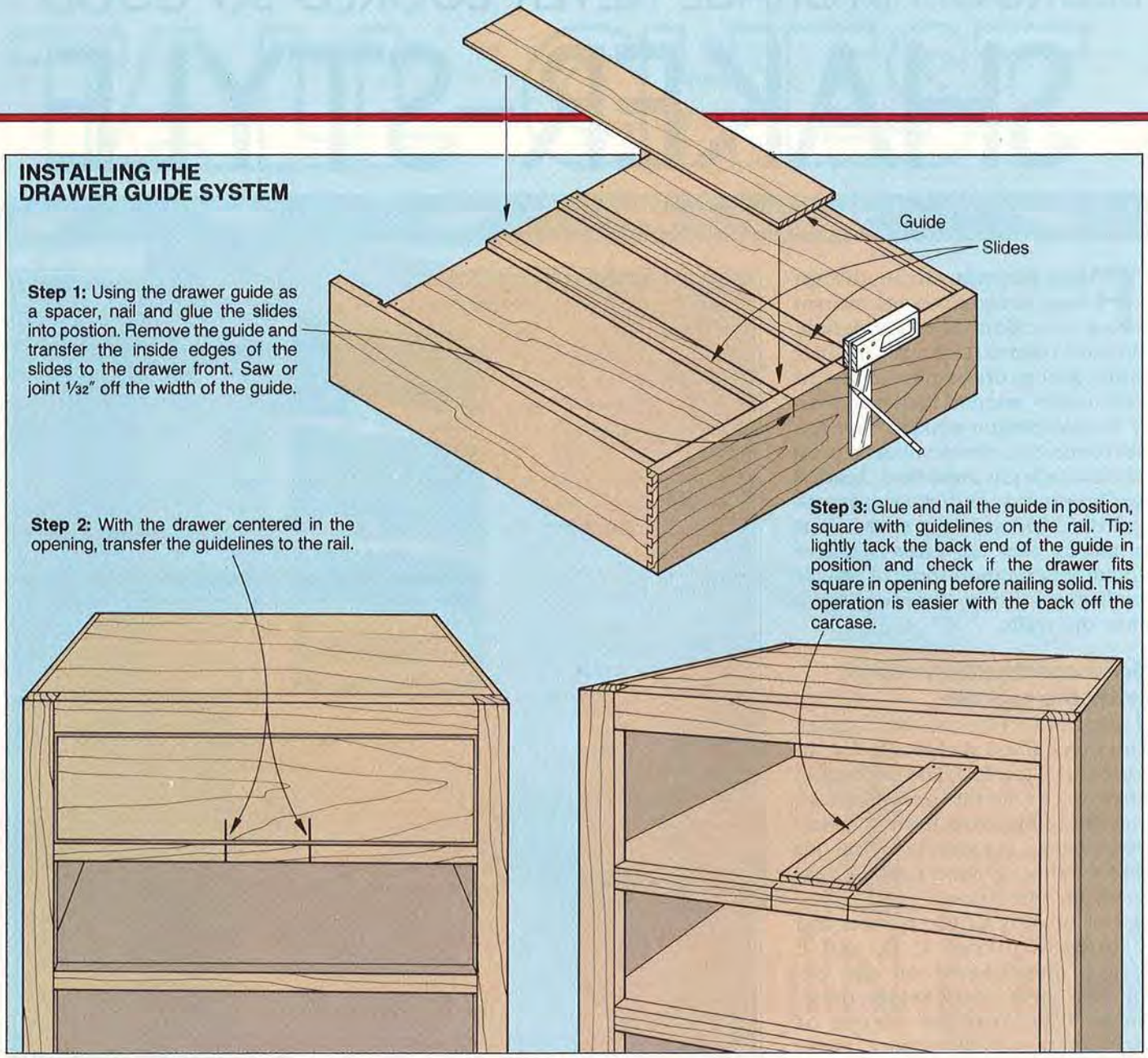
Reposition your clamps slightly to make the drawer square.

ADJUSTING CLEARANCE OF DRAWER FRONT TO OPENING


STEP 1: If necessary, plane material from bottom edges of sides and front so front sits flat on frame.
Face frame
Drawer
STEP 2: Scribe edge and with a belt sander remove material for uniform clearance.
FRONT VIEW
Face frame
1/16"
SIDE VIEW
STEP 3: Plane bottom edge of front to match clearance at top edge.
Drawer
1/16"

After the glue dries, slide the bottom into place and secure it to the back with three ¾" brads. Turn the drawer bottom side up and place some weight (such as two one-gallon containers of fluid) onto the center of the bottom. Apply three 1"-long beads of hotmelt glue to the joints between the bottom and sides and bottom and front as shown at *right*. Leave the weight in place until the glue hardens. This prevents the bottom from rattling, and eliminates gaps between the bottom and sides on the inside of the drawer.

A few beads of hotmelt glue will hold the bottom in place and prevent it from rattling around in its groove.


INSTALLING THE
DRAWER GUIDE SYSTEM
Step 1: Using the drawer guide as a spacer, nail and glue the slides into postion. Remove the guide and transfer the inside edges of the slides to the drawer front. Saw or joint 1/32" off the width of the guide.
Guide
Slides
Step 2: With the drawer centered in the opening, transfer the guidelines to the rail.
Step 3: Glue and nail the guide in position, square with guidelines on the rail. Tip: lightly tack the back end of the guide in position and check if the drawer fits square in opening before nailing solid. This operation is easier with the back off the carcase.

How to install the drawer

Since few of us can build a perfectly square, exactly sized drawer, or a perfect opening to place it into, you'll need to make some slight adjustments for a nice fit. First, place the drawer into its opening, and then follow the three-step process *above* for creating uniform clearance all around the drawer.

With the back removed from your project's carcase, install the drawer guide system according to the drawing *above* titled Installing the Drawer Guide System. In Step 1, take care to butt the slides tightly against the guide before nailing them into position. By sawing or jointing 1/32" off the width of the guide before installing it, you allow the drawer to slide over the guide without excessive play. If the drawer does not have a panel directly above it, then position and secure a kicker according to the drawing and notes on *page 31*.

The final touches

Before applying finish to the drawer, drill any holes necessary for attaching the pull. Then, apply equal amounts of finish to all surfaces of the drawer. This will help prevent the drawer parts from shrinking or expanding at different rates, which could throw the drawer out of square. Finally, rub paraffin wax onto the bottom surface of the kicker, the bottom edges of the drawer sides, the inside edges of the slides, and the outside edges of the guide for smooth operation.

Written by Bill Krier with Jim Boelling
Illustrations: Kim Downing
Photographs: Hopkins Associates

BEDROOM STORAGE NEVER LOOKED SO GOOD

SHAKER-STYLE

Elegantly simple in design and straightforward in construction, this handsome project reflects a much simpler time when craftsmanship and practicality reigned supreme.

, The adaptation you see here has its roots in a classic Shaker project, the upright cupboard. Loaded with drawers and a convenient cabinet for storing shirts and sweaters, this tall chest replaces the more common form of Shaker bedroom storage—drawers built into the walls.

Solid construction starts with the carcase

1 Rip and crosscut the dresser sides (A), fixed shelves (B, C), divider (D), top (E), and adjustable shelves (F) to the sizes listed in the Bill of Materials from ¾" cherry plywood. For ease in laying out and cutting, see the Cutting Diagram for our layout.

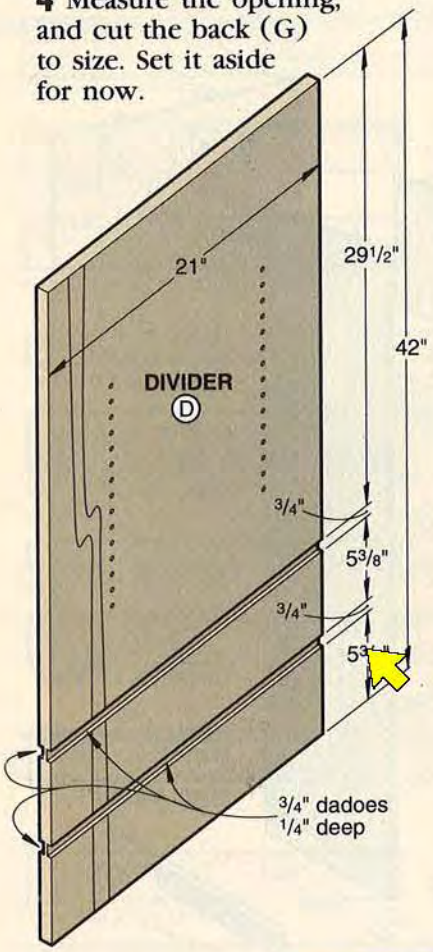
2 Cut or rout all the rabbets and dadoes in pieces A, D, and E where dimensioned on the Exploded View and Divider drawings. (We applied pieces of masking tape to each piece, marking the good face, top, bottom, and back edges where necessary. This helped prevent us from dadoing or rabbeting the wrong face and proved helpful later when assembling the cabinet.)

3 Dry-clamp the pieces (except for the adjustable shelves) to check the fit. The interior parts (B, C, D, E) set ⅜" back from the front edge of the side pieces (A). The back edges of B, C, and D should be flush with the shoulder of the rabbet along the back edges of parts A and E. Trim if neces-

TALL CHEST

sary. Now, glue and clamp the pieces, checking to make sure they are square.

4 Measure the opening, and cut the back (G) to size. Set it aside for now.



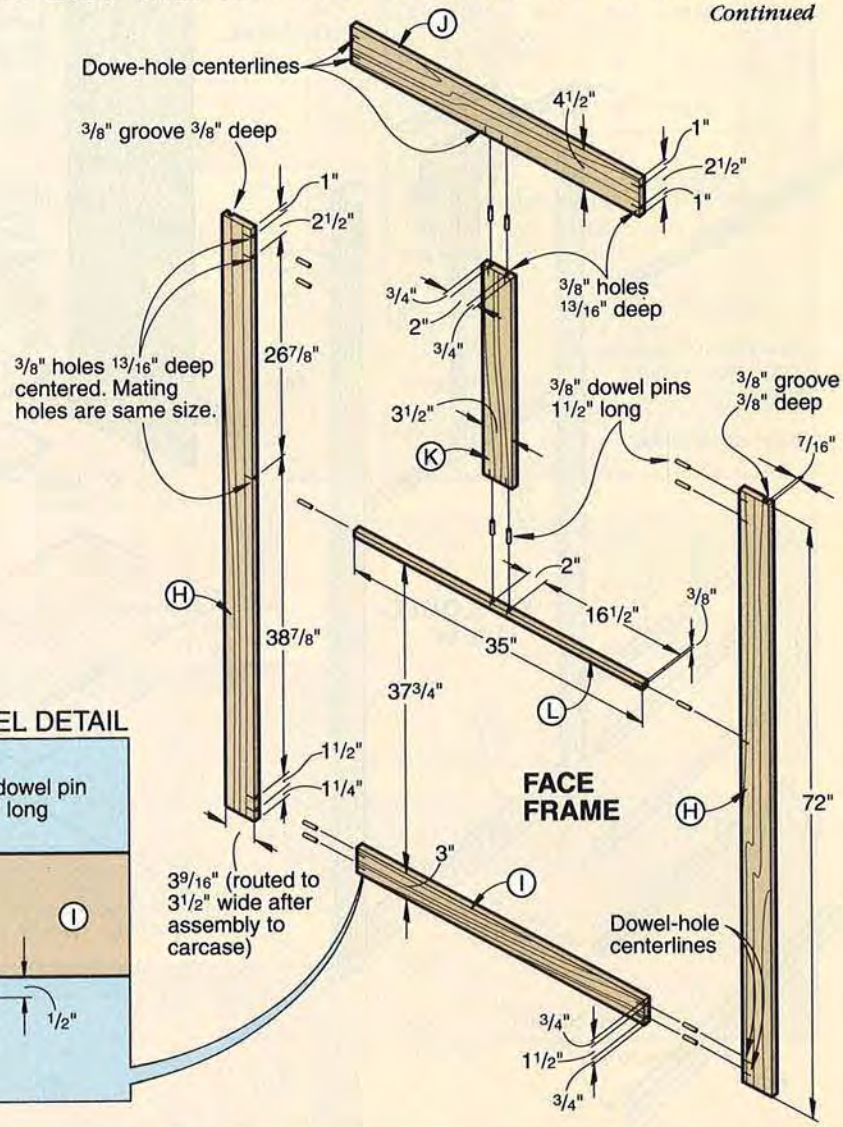
Add the solid-cherry face frame

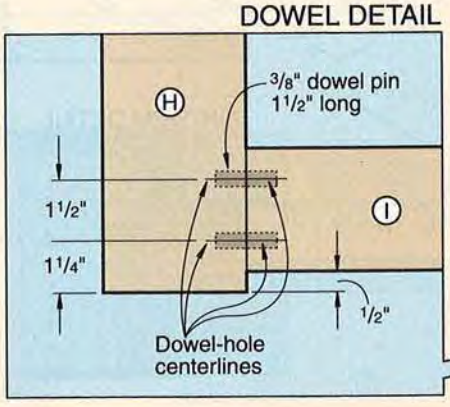
1 From solid ¾" cherry stock, cut the face frame stiles (H) to the sizes listed in the Bill of Materials plus 1/16" extra in width. (We cut them extra wide so we could rout them flush with the sides of the carcase later.) Cut or rout a ⅜" groove ⅜" deep along the back side of each stile where shown on the Face Frame drawing and Rabbet detail accompanying the Exploded View drawing.

2 Now, cut the bottom rail (I), top rail (J), mullion (K), and middle rail (L) to size.

3 Dry-clamp (no glue) the face frame together. Using a helper, set the cabinet carcase on its back. Then, position the clamped-up face frame on the front of the

Continued





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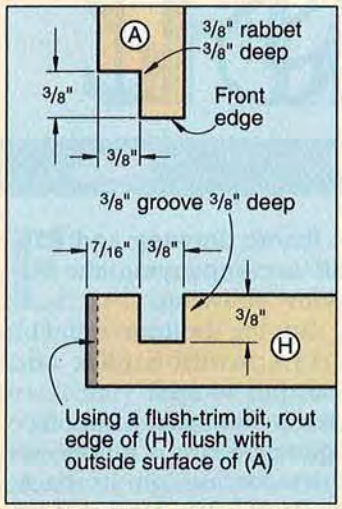
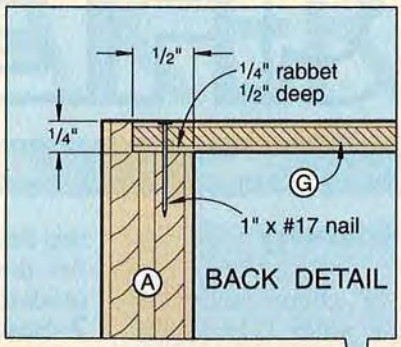
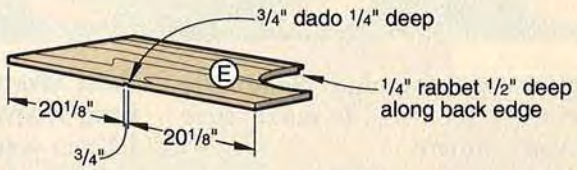
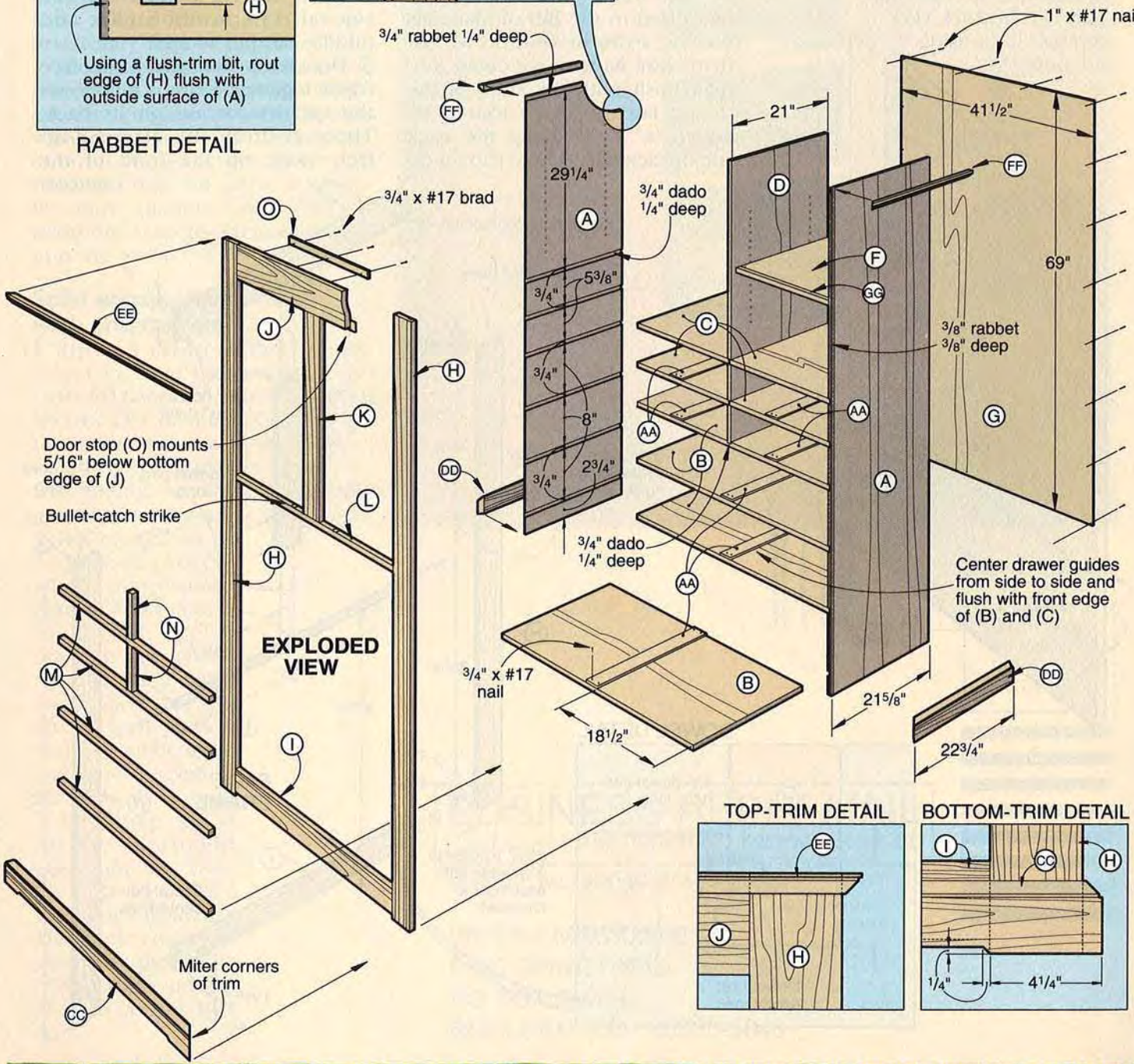


RABBET DETAIL







TOP-TRIM DETAIL

BOTTOM-TRIM DETAIL

Bill of Materials

Parts	Finished Size T	W	L	Matl.	Qty.
CARCASE					
A sides	¾"	21⅝"	72"	CP	2
B shelves & bottom	¾"	21"	41"	CP	4
C shelves	¾"	21"	20⅜"	CP	4
D divider	¾"	21"	42"	CP	1
E top	¾"	21¼"	41"	CP	1
F shelves	¾"	20"	19¾"	CP	4
G back	¼"	41½"	69"	CP	1
FACE FRAME					
H* stiles	¾"	3½"	72"	C	2
I bottom rail	¾"	3"	35"	C	1
J top rail	¾"	4½"	35"	C	1
K mullion	¾"	3½"	25½"	C	1
L rail	¾"	¾"	35"	C	1
M rails	¾"	¾"	35"	C	4
N mullions	¾"	¾"	5⅜"	C	2
O door stops	¼"	1"	19¾"	C	2
DOORS					
P stiles	¾"	3½"	25¼"	C	4
Q rails	¾"	3½"	9⅝"	C	4
R* panels	½"	9⁹⁄₁₆"	19³⁄₁₆"	EJC	2

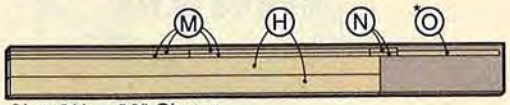
Parts	Finished Size T	W	L	Matl.	Qty.
SMALL DRAWERS					
S fronts	¾"	5⁵⁄₁₆"	17"	C	4
T sides	½"	5⁵⁄₁₆"	20⁹⁄₁₆"	B	8
U backs	½"	4¾"	16½"	B	4
V bottoms	¼"	18½"	16½"	CP	4
LARGE DRAWERS					
W fronts	¾"	7¹⁵⁄₁₆"	34⅞"	C	3
X sides	½"	7¹⁵⁄₁₆"	20⁹⁄₁₆"	B	6
Y backs	½"	7⅜"	34⅜"	B	3
Z bottoms	¼"	18½"	34⅜"	CP	3
GUIDES, SLIDES, AND TRIM					
AA guides	¼"	4"	21"	B	7
BB slides	¼"	1½"	18¼"	B	14
CC* bottom front	¾"	2¾"	43½"	C	1
DD* bottom sides	¾"	2¾"	22¾"	C	2
EE* top front	¾"	⅞"	43½"	C	1
FF* top sides	¾"	⅞"	22¾"	C	2
GG* shelf fronts	¾"	¾"	19¾"	C	4

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

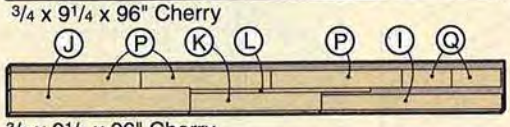
Material Key: CP–cherry plywood, C–cherry, EJC–edge-joined cherry, B–beech, BP–birch plywood

Supplies: ⅜" dowel pins 1½" long, ¾"×#17 nails, ¾"×#17 brads, 1"×#17 nails, clear finish.

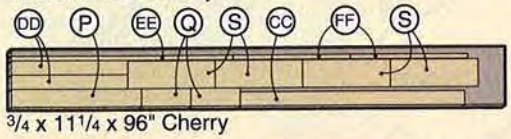
CUTTING DIAGRAM



¾ x 9¼ x 96" Cherry



¾ x 9¼ x 96" Cherry



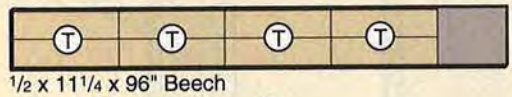
¾ x 11¼ x 96" Cherry

¾ x 9¼ x 72" Cherry

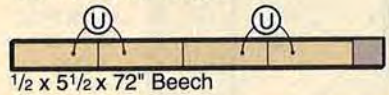
*Plane or resaw to size stated in Bill of Materials

¾ x 9¼ x 72" Cherry

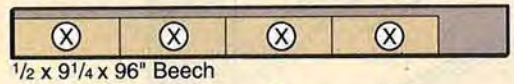
½ x 5¼ x 96" Cherry



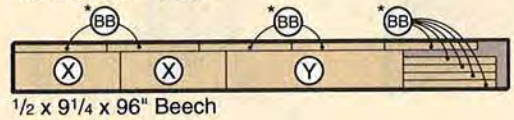
½ x 11¼ x 96" Beech



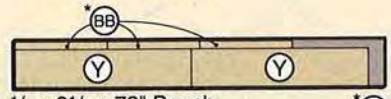
½ x 5½ x 72" Beech



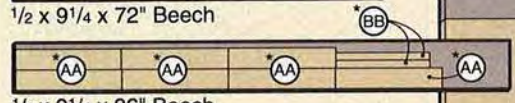
½ x 9¼ x 96" Beech



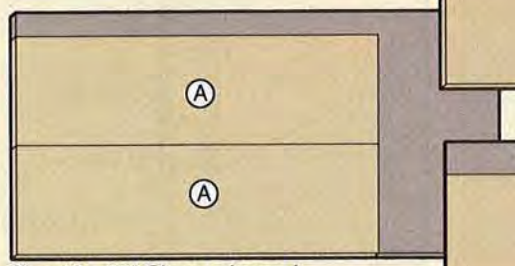
½ x 9¼ x 96" Beech



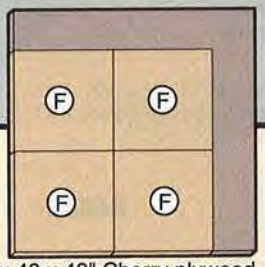
½ x 9¼ x 72" Beech



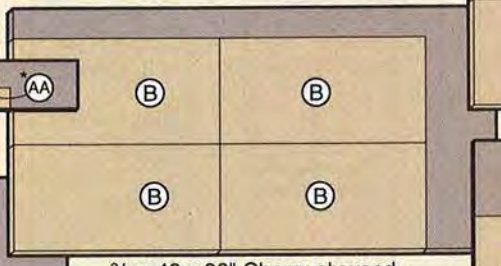
½ x 9¼ x 96" Beech



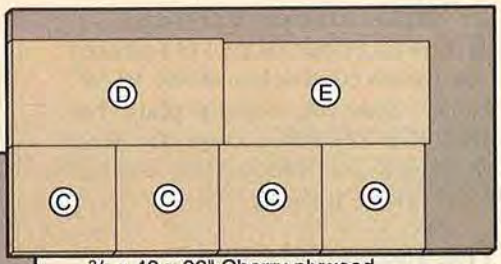
¾ x 48 x 96" Cherry plywood



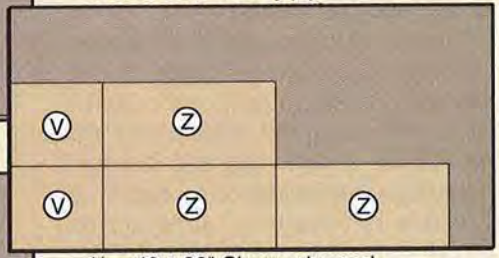
¾ x 48 x 48" Cherry plywood



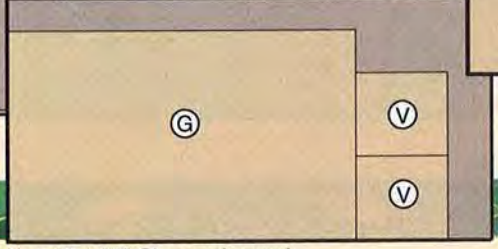
¾ x 48 x 96" Cherry plywood



¾ x 48 x 96" Cherry plywood



¼ x 48 x 96" Cherry plywood



¼ x 48 x 96" Cherry plywood

TALL CHEST

cabinet to verify the tongue on the front edge of the sides (A) fits into the grooves in the back faces of the stiles (H). Then check that the center rail (L) sits directly over the front edge of the middle shelf (B). Adjust if necessary.

4 With the assembly still clamped together, use a square to mark the dowel-hole centerlines across each joint where shown on the Face Frame drawing.

5 Using a doweling jig and the marked centerlines, drill ⅜" holes to the depths marked on the drawing for the dowel pins.

6 Glue, dowel, and clamp the face frame, checking for square. Later, remove the clamps and excess glue. Sand the front and back of the face frame smooth.

7 Glue and clamp the face frame to the cabinet with the ends flush.

8 Later, remove the clamps. Mount a flush-trim bit in your router, and rout the protruding edges of the stiles (about 1/16") flush with the outside faces of the cabinet sides (A). See the Rabbet detail for reference.

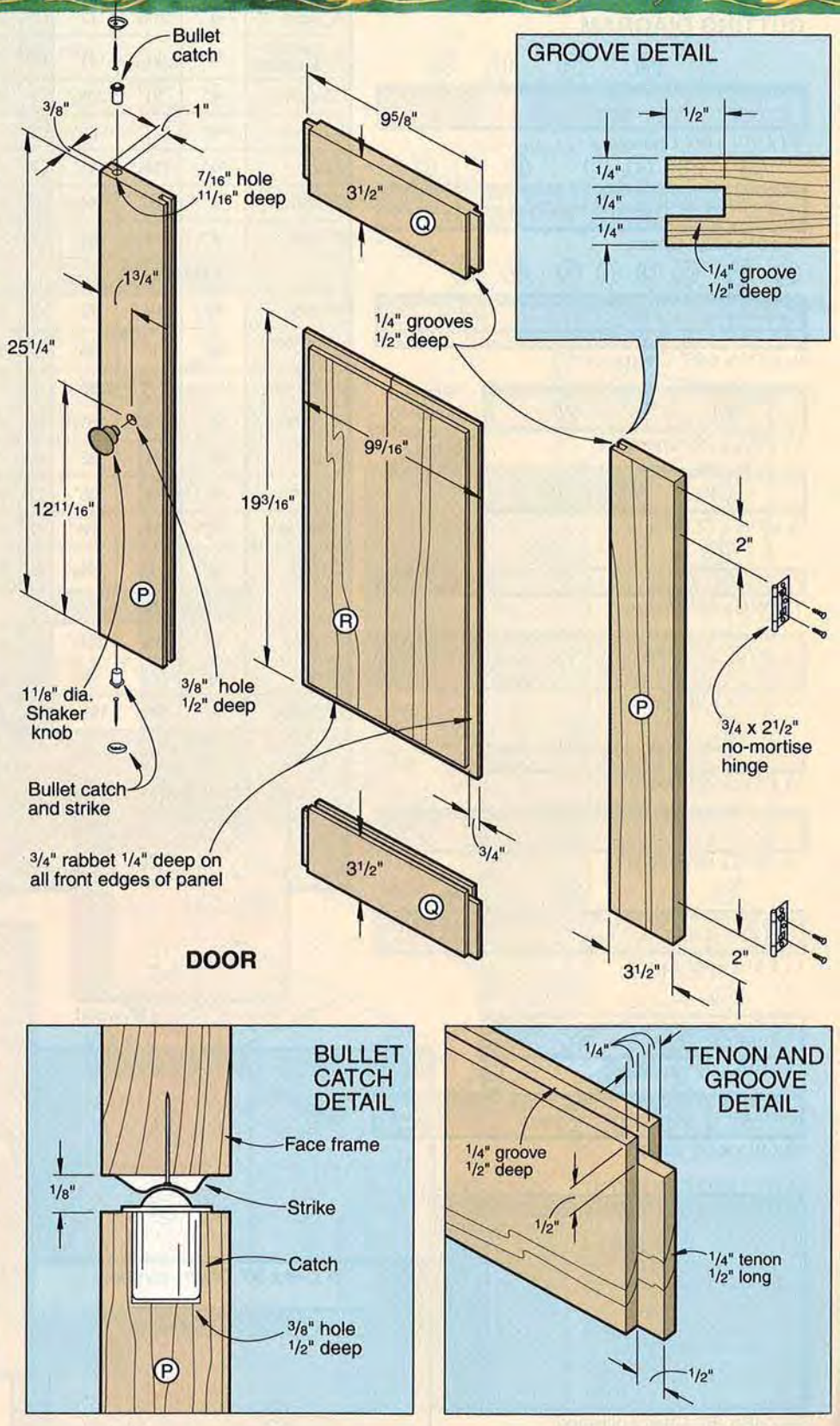
9 Cut the remaining rails and mullions (M, N), and, using bar clamps, clamp them to the front of the cabinet where shown on the Exploded View drawing.

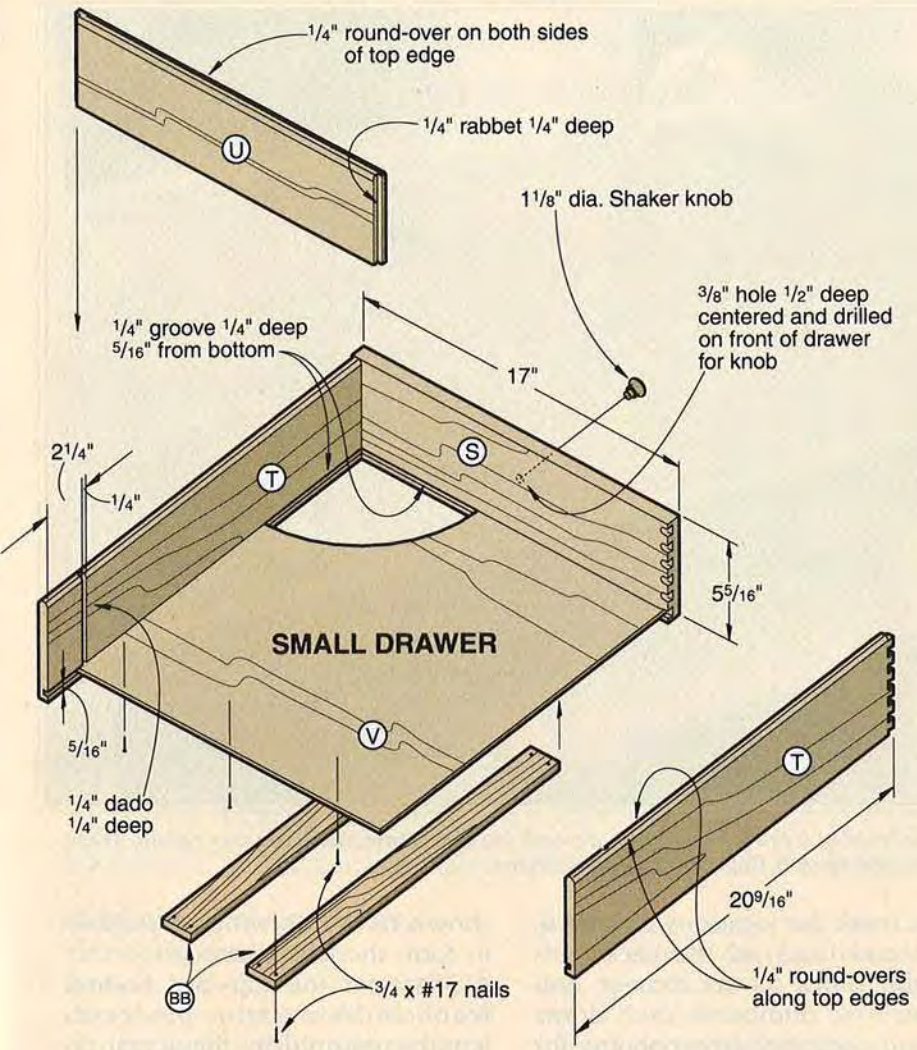
10 Cut the door stops (O) to size (we resawed thicker stock to ¼" thick). Glue the stops in place behind the top rail (J) so the stop protrudes 5/16" below the bottom edge of the top rail.

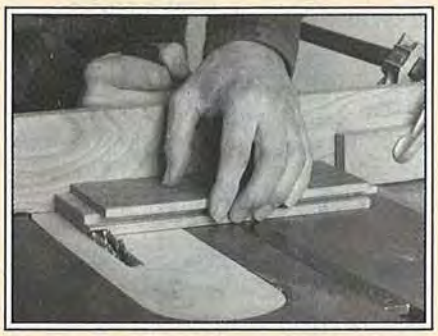
The frame-and-panel doors come next

1 Cut the door stiles (P) and rails (Q) to size. Cut or rout a ¼" groove ½" deep along one edge of each stile and rail where shown on the Door drawing and accompanying Groove detail at *right*.

2 Cut a ¼" tenon ½" long across each end of each rail. (We mounted a dado blade to our







Cut a ¼" tenon ½" long across the ends of the door rails. Clamp a stop to the miter-gauge fence for consistent lengths.

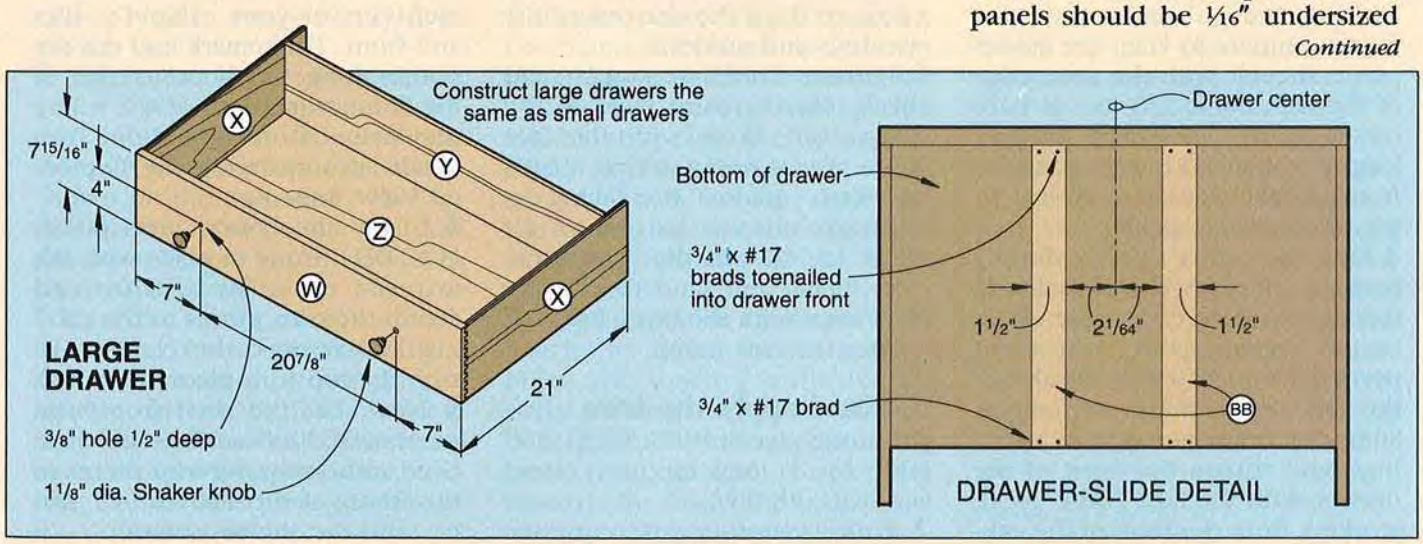
tablesaw and an auxiliary fence to our miter gauge. Then, we raised the blade ¼" above the saw table, clamped a stop to the miter-gauge auxiliary fence, and cut the ends to form the tenons as shown in the photo *above.*)

3 To achieve the wide width for the door panels (R), edge-join stock to form two ½ × 10 × 20" pieces. Then, trim each panel to finished size, keeping the joint line centered from side to side. We prefer to edge-join narrower stock for pieces this wide to diminish the chances of warpage.

4 Cut ¾" rabbets ¼" deep along the front edges of each panel as shown on the Door drawing.

5 Test-fit the door pieces. The panels should be 1/16" undersized

Continued



in width to allow it to expand and contract within the frame. Applying glue to the rails and stiles *only,* assemble the door parts for each door and clamp. This allows the panel to float inside the frame *without* glue.

And now for the drawers

Note: *See the preceding drawer-construction and installation article for an in-depth look at our drawer-making techniques. Use these methods and the Drawer drawings to build the four small and three large drawers. The sizes for the drawers are listed in the Bill of Materials. For a continuous flow of grain across the side-by-side drawer fronts, see the Cutting Diagram.*

For stability, we used ½" beech for the drawer sides and back. Cherry or birch would also work.

For smooth action, add the guides and slides

1 Cut the drawer guides (AA) and slides (BB) to size. Sand a slight round-over along the top two edges of each guide.

2 Glue and nail a guide to each of the fixed shelves (B, C), accurately centered between the stiles of each drawer opening. (When attaching the guides, we used a framing square to keep the guides perpendicular with the front edge of the face frame. (To act as handles until the knobs are fastened later, we attached duct tape to the front of each drawer as shown in the photo *above right.*)

3 Find the center of each drawer bottom, and use ¾×#17 brads to toenail the front end of the slides to the drawer front (two brads per front end of each slide). See the Drawer detail for reference. Slide the drawers into the openings, and square the front of the drawer with the face frame. Next, working from the back of the cabinet, mark the locations, and then, glue and brad-nail the back ends of the slides to the drawer bottoms. (We numbered each drawer and corresponding opening for a custom fit of the drawers to the openings and guides.)

4 Reinsert the drawers again, and check that the front faces of the drawers are flush with the face frame. If you find a drawer that is not flush, mark a line along its edges as shown in the photo *above* to indicate the protrusion. Now, plane and sand the drawer front even with the lines. Recheck against the face frame.

If the front of a drawer protrudes beyond the face frame, mark the protrusion. Then, plane and sand it flush with the face frame.

Cut and apply the trim

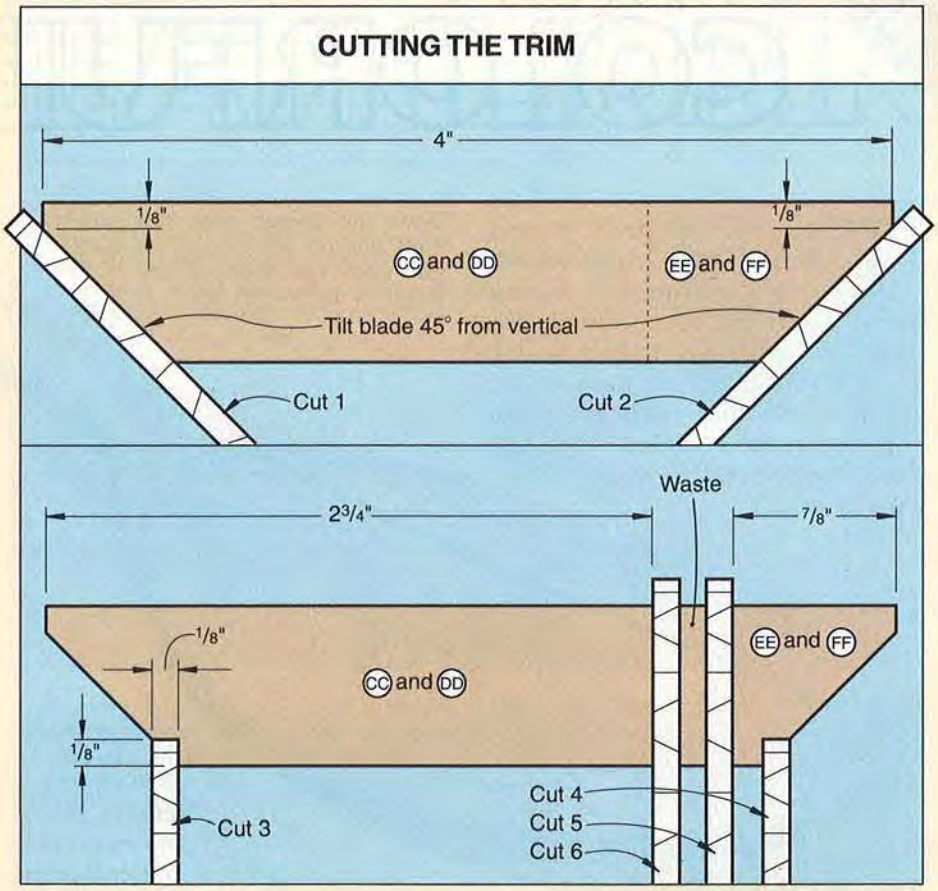
1 Cut one piece of ¾" cherry to 4" wide by 8' long for trim pieces (CC, DD, EE, FF).

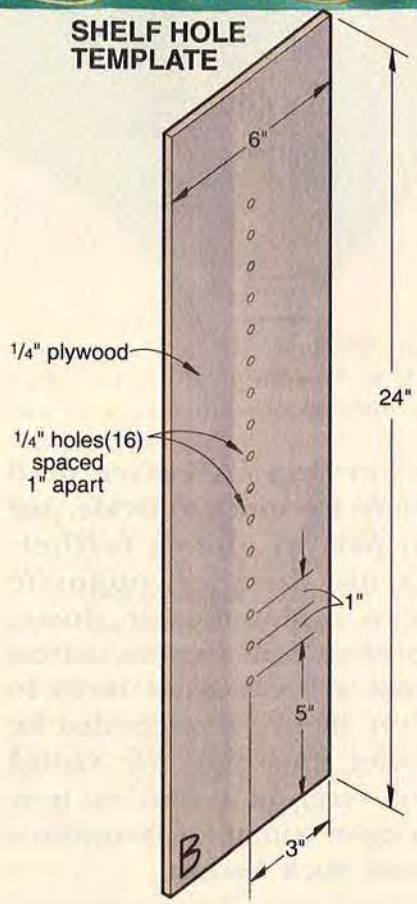
2 Follow the six-cut sequence shown in the drawing on *page 43* to form the trim pieces.

3 Miter-cut the top and bottom front and side trim pieces to lengths required by the actual dimensions of your cabinet's sides and front. Then, mark and cut the notch along the bottom edge of the front trim piece (CC) where dimensioned on the Bottom Trim detail accompanying the Exploded View drawing.

4 Clamp the bottom trim pieces (CC, DD) firmly in place with the mitered ends flush. Glue and clamp the trim pieces to the cabinet and remove the clamps. Attach the top trim pieces (EE, FF).

5 Now, cut the shelf front trim pieces (GG) to size for each shelf. Glue and clamp the trim pieces to the fronts of the shelves (F). Later, sand the shelves smooth.





Add the shelves, doors, drawers, and finish

1 Make a shelf-hole template like that shown *above right*. Mark a B on the bottom end; this will prevent you from inadvertently flopping it end for end.

2 Using the shelf-hole template and a depth-stop on your drill bit, drill ¼" holes ⅜" deep into the sides (A) and divider (D) where shown on the Exploded View.

3 Mark the centerpoints, and drill the holes for the Shaker knobs in the drawers and doors.

4 Mark the centerpoints, and drill the holes for a pair of bullet catches in each door where shown on the Exploded View drawing and the Bullet Catch detail accompanying the Door drawing. Do not insert the catches in the doors just yet.

5 Add the hinges to the doors where shown on the Door drawing. Next, with an equal gap at the top and bottom, fasten the hinged doors to the cabinet.

6 Remove the hinges from the doors and stiles. Sand the cabinet, back, drawers, doors, and adjustable shelves smooth. Add the finish to all parts, including the Shaker knobs, being careful not to get any finish into the holes for the knobs, the tenons on the end of each knob, and in the bullet catch holes.

7 Insert the bullet catches and reattach the doors to the cabinet. Mark the mating bullet-catch strike locations on the face-frame rails (J, L). With the groove in the bullet-catch strike opening toward the front of the cabinet, nail the strikes to the top and bottom rails, centered over or under the protruding ball of each catch when the door is closed.

8 Position the back in the rabbeted opening, and nail it in place. Glue the Shaker knobs in place. Insert the shelf clips and add the adjustable shelves.

Buying Guide

• **Hardware.** 4—⅜ × ½" bullet catches and strikes (#28464), 2 pair ¾ × 2½" no-mortise hinges (#28696), 12—1⅛" diam. cherry Shaker knobs (#78469), 16 shelf clips (#62067-4 sets). Kit no. 80870, $49.95 ppd. Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374-9514. Or call 612/428-2199 to order.

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: Wm. Hopkins
Illustrations: Kim Downing

Print this article

CARVE A COLORFUL

If carving an entire bird seems too much to tackle, just do part of one—a feather. Harold Rosauer, *opposite page,* a Manchester, Iowa, teacher and carver, often takes a break from birds to carve lifelike feathers that he makes into pins. We visited him recently to find out how to carve one of his favorites, a wood duck feather.

TOOLS AND SUPPLIES

Stock: ⅜×2×3″ basswood or other carving wood

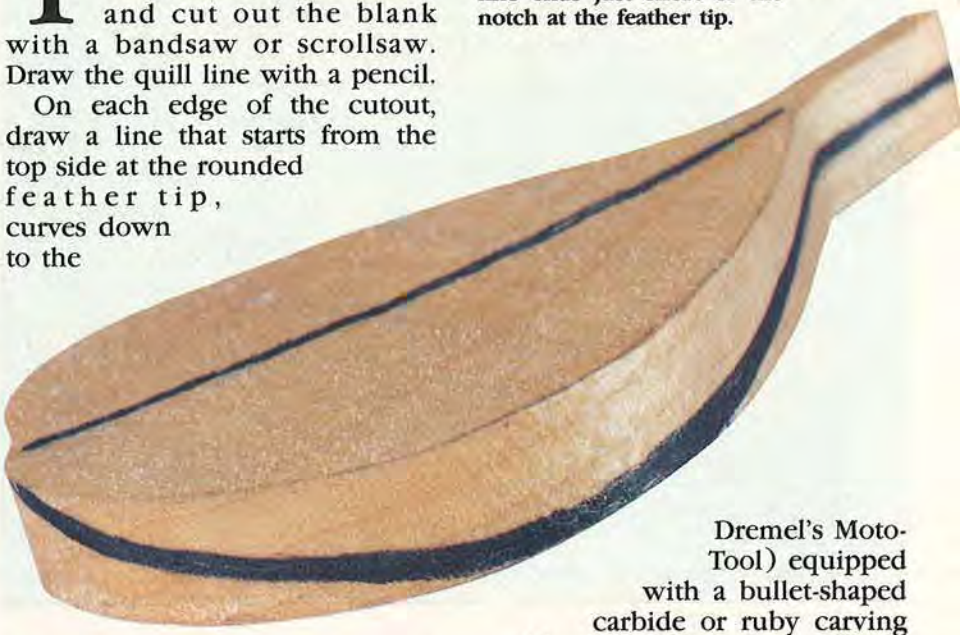
Tools: Flexible-shaft machine or hand-held rotary tool
Carbide or ruby carving bits, ¼″ diameter, coarse and fine
Structured tungsten carbide burr, ½″ or ¾″ diameter
Sanding drum for power carver
Woodburning tool (optional)

Finishing supplies:
Sanding sealer
Acrylic gesso
Acrylic artist's colors
Iridescent white
Titanium white
Turner's yellow (yellow ocher)
Medium yellow
Neutral gray
Raw sienna
Black
Brushes
Round #5, #0

Trace the full-sized pattern *below* onto your wood, and cut out the blank with a bandsaw or scrollsaw. Draw the quill line with a pencil.

On each edge of the cutout, draw a line that starts from the top side at the rounded feather tip, curves down to the bottom at the widest part of the blank, and then curves back up to the middle of the edge at the base of the feather. (Shown *above.*) From there, draw the line straight along the quill to the end.

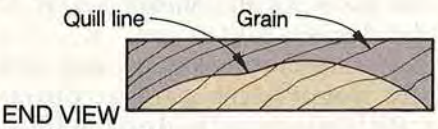
Draw the curved edge line and the quill line on the blank. The quill line ends just short of the notch at the feather tip.



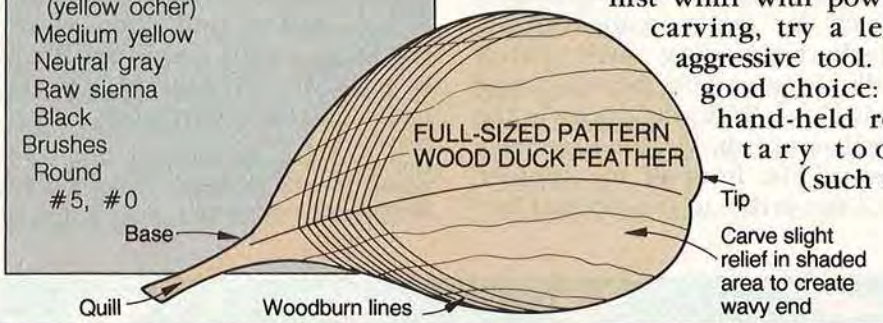
Now, rev up your carver

A flexible-shaft machine, such as the Foredom, fitted with a structured tungsten-carbide burr ¾″ in diameter, as shown in the photos, makes quick work of carving the feather to shape. But if this is your first whirl with power carving, try a less aggressive tool. A good choice: a hand-held rotary tool (such as Dremel's Moto-Tool) equipped with a bullet-shaped carbide or ruby carving bit about ¼″ diameter. (Most hobby shops and many hardware stores sell such bits.) You also can carve the feather with hand tools.

Hold the power carver as you would hold a knife, and draw the rotary cutter along the surface, (*opposite page, top left*). Remove a small amount of wood with each pass. Form a curve from the middle of the feather to the line drawn on each edge (*opposite page, middle left).*

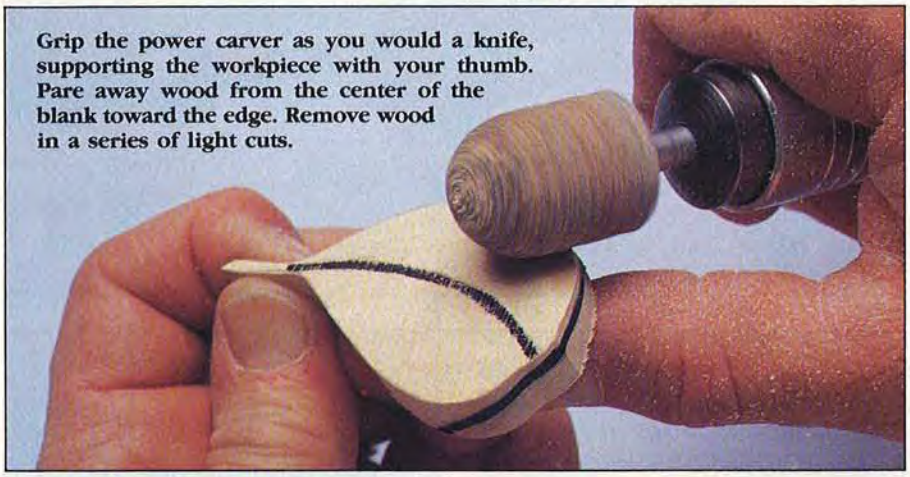


Now, the carving will resemble a lens shape when viewed from the end. Hollow out a slight relief in the area on the right side of the quill line, creating a wave on the end, shown *above.* Carve the hol-

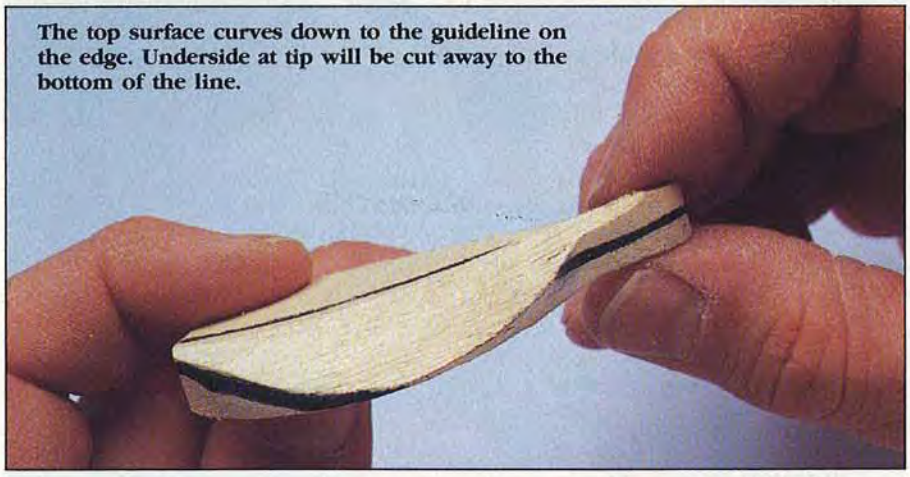


FEATHER PIN

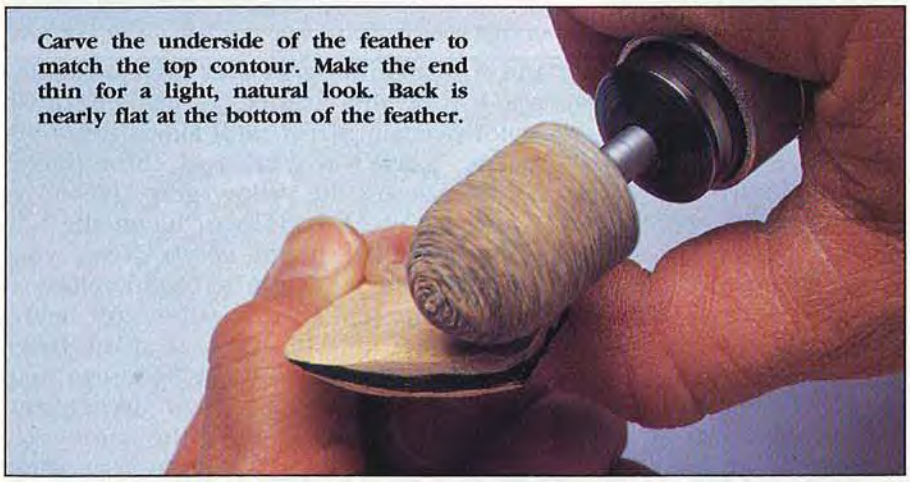
Harold Rosauer



Grip the power carver as you would a knife, supporting the workpiece with your thumb. Pare away wood from the center of the blank toward the edge. Remove wood in a series of light cuts.



The top surface curves down to the guideline on the edge. Underside at tip will be cut away to the bottom of the line.



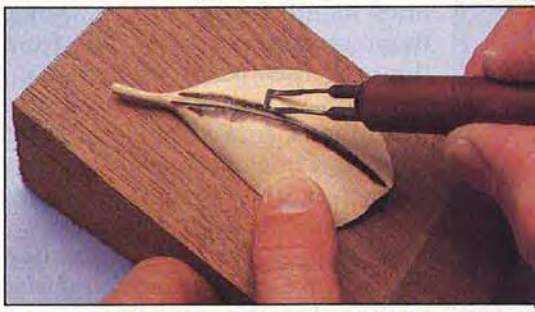
Carve the underside of the feather to match the top contour. Make the end thin for a light, natural look. Back is nearly flat at the bottom of the feather.

low about 1/16" deep at the tip. Next, carve the underside of the end to match the top contour as shown *below left.*

Thin the end to 1/16" or less for a light, wind-rippled look. Taper the hollow to a flat surface about midway down the feather.

Then, turn the feather over, and carve the quill. From the top surface, cut down to the line on the edge of the quill, creating a square stem from the base out to the end of the quill. Grind away the resulting hump near the base at the center of the feather.

Change to a sanding drum to round the quill to about 1/8" diameter. Take care—it's easy to break the quill off or make it too thin. Round over the edges as you hand-sand both sides of the feather. Then, redraw the quill line.



Raise the quill on the feather by depressing the wood on either side of the quill line with a woodburner.

Burn in feathery features

For extra realism, detail the feather with a woodburning tool. Otherwise, skip down to the next section to paint your feather.

Using a flat tip as shown *above* or the side of the tip on your woodburning pen, burn a slight

Continued

CARVE A COLORFUL FEATHER PIN

Starting in the depression beside the quill, woodburn slightly curved texture lines to the edges. Keep them parallel.

depression along each side of the quill line. The quill should describe a graceful arc, tapering from the approximate width of the carved quill at the base to that of a sharp pencil line at the tip. Accentuate the taper by burning deeper at the base of the feather than at the tip. Blend the burned area into the surface.

Then, texture the feather with parallel lines. A density of about 45 lines per inch looks realistic. (You may have to sharpen your woodburner tip on a stone to make such fine lines.)

From the burned area next to the quill, extend slightly curved lines to the feather's edge. Angle them upward at about 30° from the quill (see photo *above*).

Don't worry about burning continuous lines from center to edge, but concentrate on keeping them parallel. Burn sharp lines about the color of burnt toast.

Burn 6–10 randomly located splits through the edge of the feather. Let the woodburner tip burn through the wood as shown *top right*. Vary the width and length of the splits.

Burn through the edge in several random spots to create splits. Vary the length and width of the splits for realism.

Paint the feather bright yellow. While the yellow is still wet, paint the lower part medium gray, blending the gray into the yellow.

Paint a pretty plume

Seal the woodburned surface with a sanding sealer (Harold uses Benjamin Moore Quick-Dry Sanding Sealer), and then prime it with a thin coat of acrylic gesso. Paint the feather with acrylic artist's colors (listed on *page 44*) and a medium brush (a #5 works well). Squeeze out a bit of each color (blobs the size of pencil erasers will do) onto a damp plate or palette. Thin the paints with a few drops of water.

Mix small amounts of the two yellows to match the color shown *above*. (Don't fret over it; close will be good enough.) Paint the front of the feather, and then clean your brush in water.

With the yellow still wet, apply medium gray over the lower third of the feather. Clean the brush again, pat it until almost dry on a paper towel, and then brush across the yellow/gray division in both directions to blend the colors as shown *above*. Now, your feather should be bright yellow at the top, grayish yellow just below the middle, and gray at the base.

Let the paint dry (you can help it along with a hair dryer), and paint the feather the same way again. After this base coat dries,

Uneven lines look more natural when painting stripes on the feather. Thinned paints won't clog woodburned texture lines.

Vermiculation creates a pattern on the feather. Paint the broken lines by applying small, closely spaced dots.

paint the tip black. Bring the black down about 3/16" from the tip at the center, curving the lower line downward from the center to the edges. As you paint, remember that slightly wavering lines with fuzzy edges will look more authentic than straight ones with sharp edges.

Let it dry, and then paint a 3/16"-wide white band beneath the black one, paralleling the curvature of the black. After that dries, paint another black stripe about 1/16" wide, and then a 1/16" white stripe, as shown in the photo *top*. Let dry, and then put a second coat on all of the stripes.

To reduce the time you spend waiting for paint to dry, combine steps. Paint the black top and the first white stripe as above. Then, when you paint the next black stripe, recoat the black on top at the same time. Continue in this fashion until you've put two coats on all of the stripes.

Don't be concerned if some of the white bleeds along the woodburned lines into the black areas. This will soften the lines, making your feather more true-to-life. Thin a small amount of raw sienna to a watery consistency, and paint a narrow stripe on each side of the quill on the yellow portion of the feather. Blend it outward with a damp brush until only a hint of the color remains, creating a slight, reddish brown highlight along either side of the quill.

Feathers look good whether woodburned (*left*) or not (*right*).

If you didn't woodburn your feather, dry-brush a few random black streaks through the yellow area. Pat the dry brush on the surface of unthinned black paint to pick up a little pigment, and then lightly brush a few barely visible lines across the feather's surface.

Now, for some vermiculation

Vermiculation, the pattern of wavy lines on the feather, consists of closely spaced dots applied with a small, pointed brush (#0, for example). Start with a row of black dots along the line where the bottom white stripe meets the yellow. Avoid uniform, evenly spaced, and neatly aligned dots—you want a ruffled appearance.

Paint four or five rows on one half of the feather, spacing them about 1/16" apart, and then paint the corresponding rows on the other side of the quill, as shown *left middle*. You should have room for about 20 lines of vermiculation on the feather.

About halfway down, start adding a bit of gray to your black paint, using a little more gray as you near the base of the feather. When you're done, go back and dab a spot of gray on a dozen or so randomly selected dots.

Then, accent the splits with black paint, and add a few black strokes to simulate internal splits, shown *below left*. If you didn't woodburn any splits, paint them with a black line starting at the edge. (The feather on the *right* in the photo wasn't woodburned.)

Paint the quill and the raised quill line titanium white. Don't paint the line all the way to the top of the feather, let it fade out 1/16–1/32" shy of the end. Let the white dry, and then apply iridescent white. Attach a bar pin (available from craft suppliers) lengthwise on the flat part of the back with epoxy glue.

Written by Larry Johnston
Project Design: Harold Rosauer
Photographs: Harry Baumert
Illustrations: Mike Henry

IMPROVE YOUR SHOP'S ENVIRONMENT WITH THIS AIR-FILTRATION

Even with the best of dust collection systems, you can reduce airborne dust in your shop only so much. And, if you're confined to working in a small shop, or one with poor ventilation, it doesn't take much sanding or cutting to raise a cloud of fine, harmful sawdust. To help siphon off such lung-clogging dust particles, I designed and built this air-filtration cabinet.

I've made the cabinet so the top is just slightly below the top surface of our IDEA SHOP tablesaw. The cabinet top adjusts up or down if needed, enabling it to double as a handy outfeed table.

Design Editor

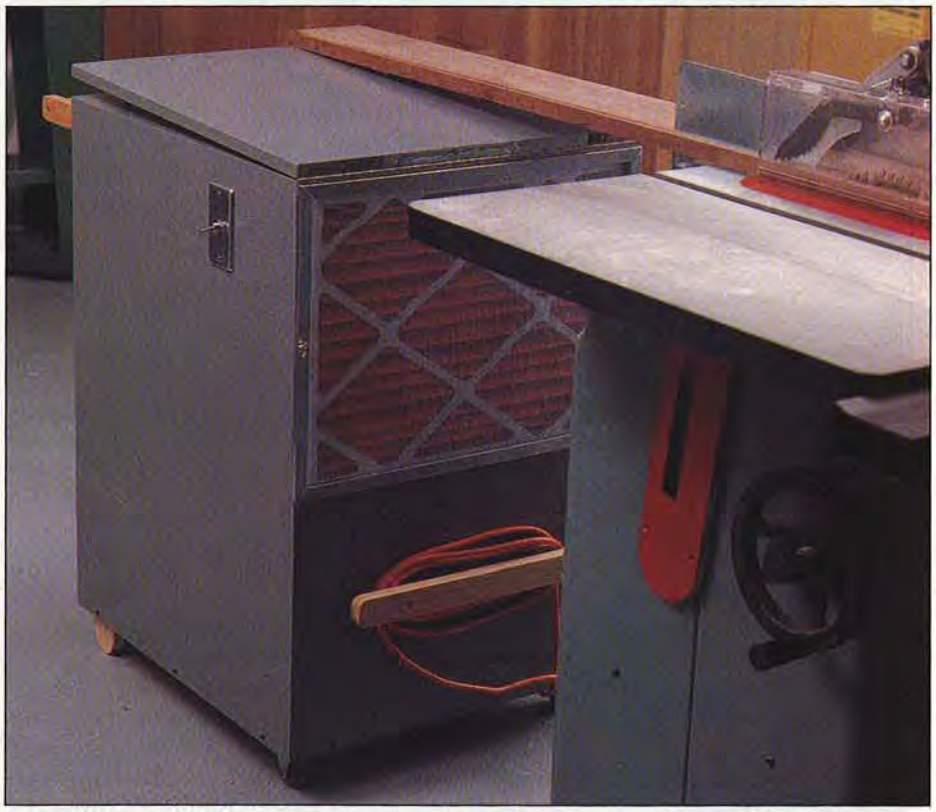
Note: *We used a 3/4-width blower (commonly found with heating and cooling systems) and a 1/4-hp motor. See the Buying Guide on* page *74 for more information or contact your local heating contractor for a used system.*

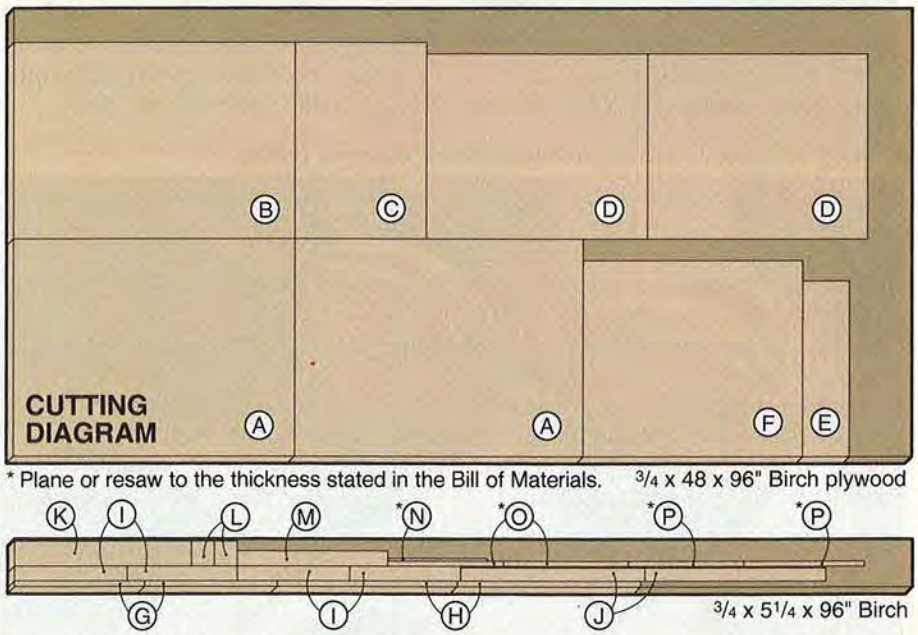
Start with the cabinet and the base

1 From ¾" plywood (for a smooth painted finish, we used birch plywood), cut the cabinet sides (A), back (B), front (C), base and top (D), support (E), and adjustable top (F) to the sizes listed in the Bill of Materials.

2 Mount a ¾" dado blade to your tablesaw, and cut ¾" rabbets ½" deep on the plywood pieces A, B, and C where shown on the Exploded View and Parts View drawings. Dry-clamp the pieces (A, B, C, D, E) to check the fit.

Continued





CABINET

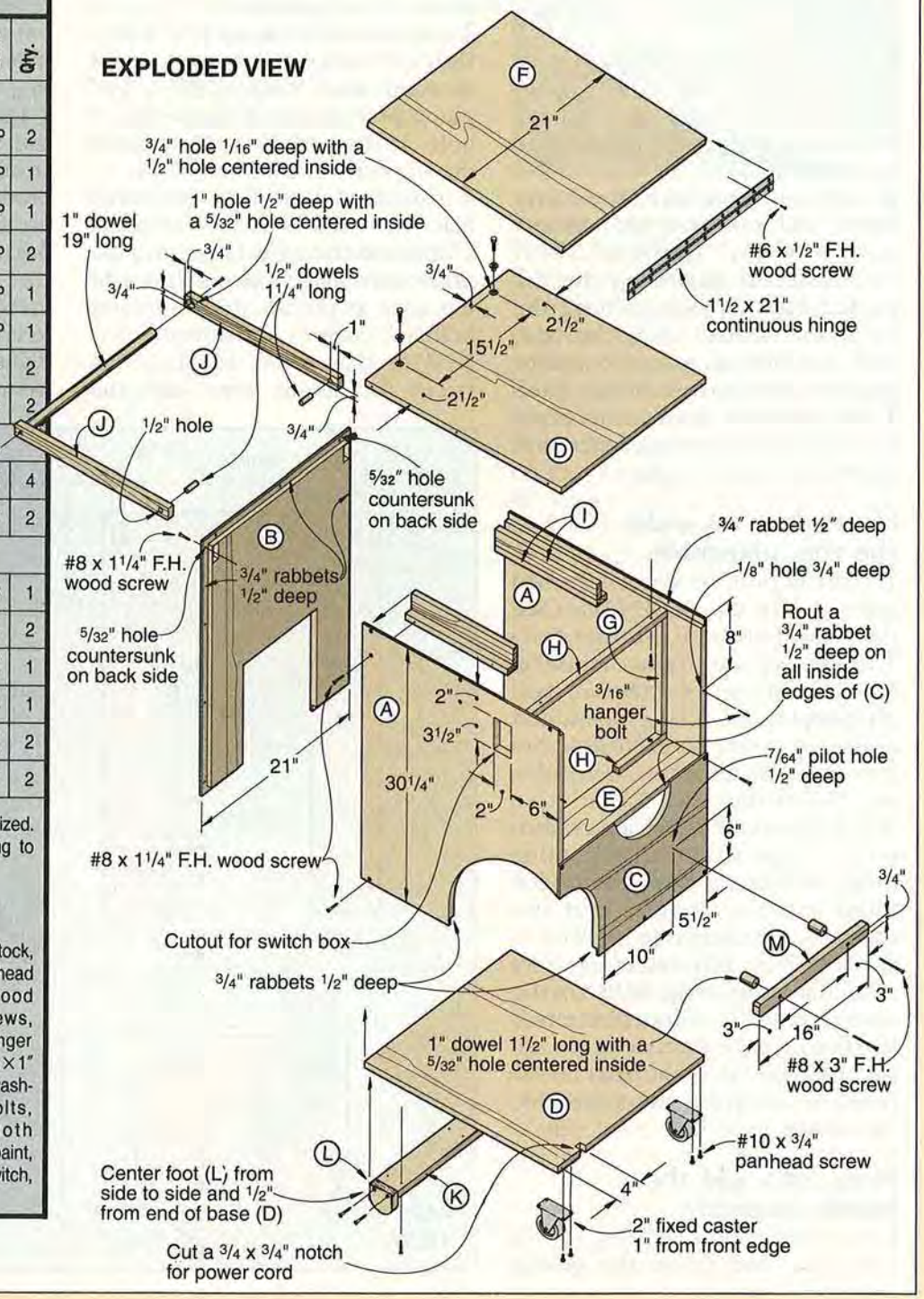
Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
BASIC CABINET					
A sides	¾"	23½"	30¼"	BP	2
B back	¾"	21"	30¼"	BP	1
C front	¾"	14"	21"	BP	1
D top & base	¾"	20½"	23½"	BP	2
E support	¾"	4¾"	19½"	BP	1
F adj. top	¾"	21"	23¾"	BP	1
G cleats	¾"	¾"	14"	B	2
H cleats	¾"	¾"	19½"	B	2
HANDLE ASSEMBLY					
I guides	¾"	1 9/16"	10"	B	4
J arms	¾"	1½"	19½"	B	2
FEET, CORD BAR, AND CLEATS					
K support	¾"	2½"	18"	B	1
L feet	¾"	2½"	2½"	B	2
M cord bar	¾"	1½"	16"	B	1
N cleat	¼"	¾"	10½"	B	1
O cleat	½"	¾"	13⅛"	B	2
P cleat	½"	¾"	12"	B	2

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

Material Key: BP–birch plywood, B–birch

Supplies: ½" dowel stock, 1" dowel stock, 1½×21" continuous hinge, #6×½" flathead wood screws, #8×1¼" flathead wood screws, #8×3" flathead wood screws, #10×¾" panhead screws, 2–3/16" hanger bolts, 2–3/16" wing nuts, 2–⅜" T-nuts, 2–⅜×1" hexhead bolts, ⅜" flat washers, ⅜" lock washers, ⅜" nuts, 4–⅜×2" hexhead bolts, ¾"×#17 brads, ½" hardware cloth 11×12⅝", 2–2" fixed casters, primer, paint, switch/receptacle box, 20-amp toggle switch, blank cover plate.



AIR-FILTRATION CABINET

3 Mark the switch-box hole location on one side piece (A) where shown on the Exploded View drawing. Using the Parts View drawing, mark the exhaust and handle cutouts in the back (B).
4 Drill a blade start hole in each marked opening, and then use a jigsaw to cut the openings to shape. Next, cut the exhaust cutout to shape.
5 Glue and clamp the cabinet assembly (A, B, C, top D, E) together. Set the base (D) aside. Check for square, and scrape off the glue squeeze-out.
6 Drill countersunk mounting holes, and reinforce the cabinet with #8 × 1¼" flathead wood screws where shown on the Exploded View drawing. Check the fit of the cabinet onto the base (D), and drill mounting holes for attaching the two assemblies later.
7 Cut the filter positioning cleats (G, H). Drill mounting holes, and screw the cleats in place.

Here's how to make the top adjustable

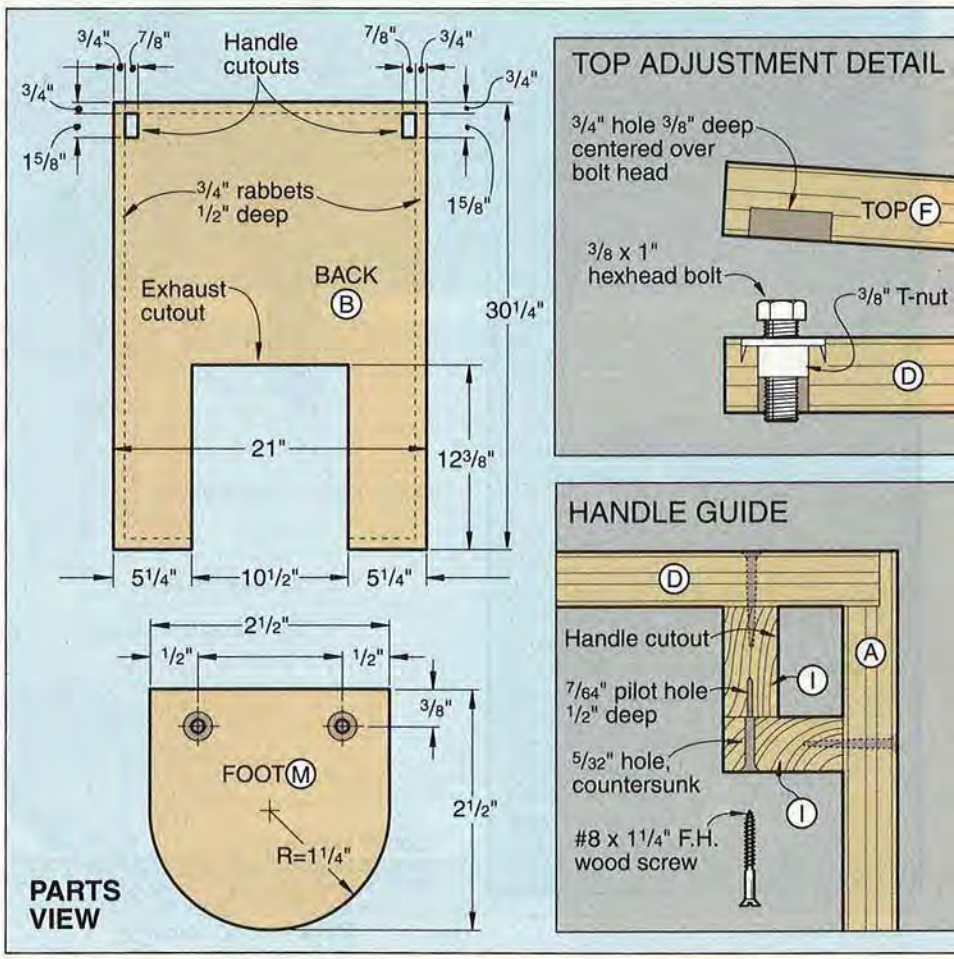
1 Drill a pair of counterbored holes in the top piece (D). (See the Exploded View drawing.)
2 Insert a ⅜" T-nut into each hole. (To prevent the T-nuts from possibly popping loose later, we added a drop of epoxy to each hole before inserting the nut.) Thread a ⅜ × 1" bolt into each T-nut.
3 Cut a piece of 1½"-wide continuous hinge to 21". Drill pilot holes and fasten one leaf to the fixed cabinet top (D) and the other to the adjustable top (F).
4 Close the adjustable top (F) onto the protruding bolts in the cabinet top (D) to indent the bolt locations on the bottom of the adjustable top. Bore a pair of ¾" holes ⅜" deep on the adjustable top where indented.

Now, let's add the handle assembly

1 Cut the handle guides (I) to size. Glue and screw the guides together. (See the Exploded View and Handle Guide drawings.)
2 Hold each handle guide assembly in place inside the cabinet, and check that the handle openings align with the inside faces of the guide assemblies. Trim if necessary. Drill mounting holes, and fasten the guide assemblies to the inside of the cabinet.
3 Cut the handle arms (J) to size. Drill a 1" hole ½" deep at one end of each arm. Then, drill a 5⁄32" shank hole centered inside the 1" hole. Drill a ½" hole 1" in from the opposite end in each arm.
4 Cut a 1" dowel to 19" long. Place the ends of the dowel in the 1" holes in the arms (J). Using the previously drilled shank holes in the arms as guides, drill 7⁄64" pilot holes 1" deep in the dowel ends.
5 With the dowel in place between the handle arms, stick the arms through the openings in the back piece (B). Slide the arms into the handle guides, and then drive #8 × 1¼" screws in place to secure the arms to the 1" dowel.
6 Cut two ½" dowels to 1¼" long, and set aside for now; you'll glue them in place in the arms later.

Add the feet and cord bar

1 Cut the foot support (K) to size. Referring to the Parts View drawing, cut the feet (L) to shape.
2 Drill mounting holes and screw the feet to the support where shown on the Exploded View drawing. Screw the assembly to the bottom of the base (D).
3 Cut the cord-storage bar (M) to size. Then, cut a pair of 1" dowels to 1½" long. Drill a 5⁄32" hole centered through each dowel. Set the pieces aside, we'll mount them to the cabinet later.



Mount the blower assembly and the electricals

1 Position the motor, blower, and bracket assembly on the base (D). Center it from side to side, and make sure that the exhaust end of the blower extends ¼" beyond the back edge of the base.

2 Using the existing holes in the blower bracket as guides, drill ⅜" holes through the base. Fasten the bracket to the base with ⅜×2" hex-head bolts where shown on the Blower Installation drawing.

3 Using the existing holes in the blower bracket as guides, drill 7/32" holes into the blower housing as shown in the photo at *right*. Fasten the blower to the metal bracket.

4 Cut the spacer cleat (N) to size, and glue and nail it in place.

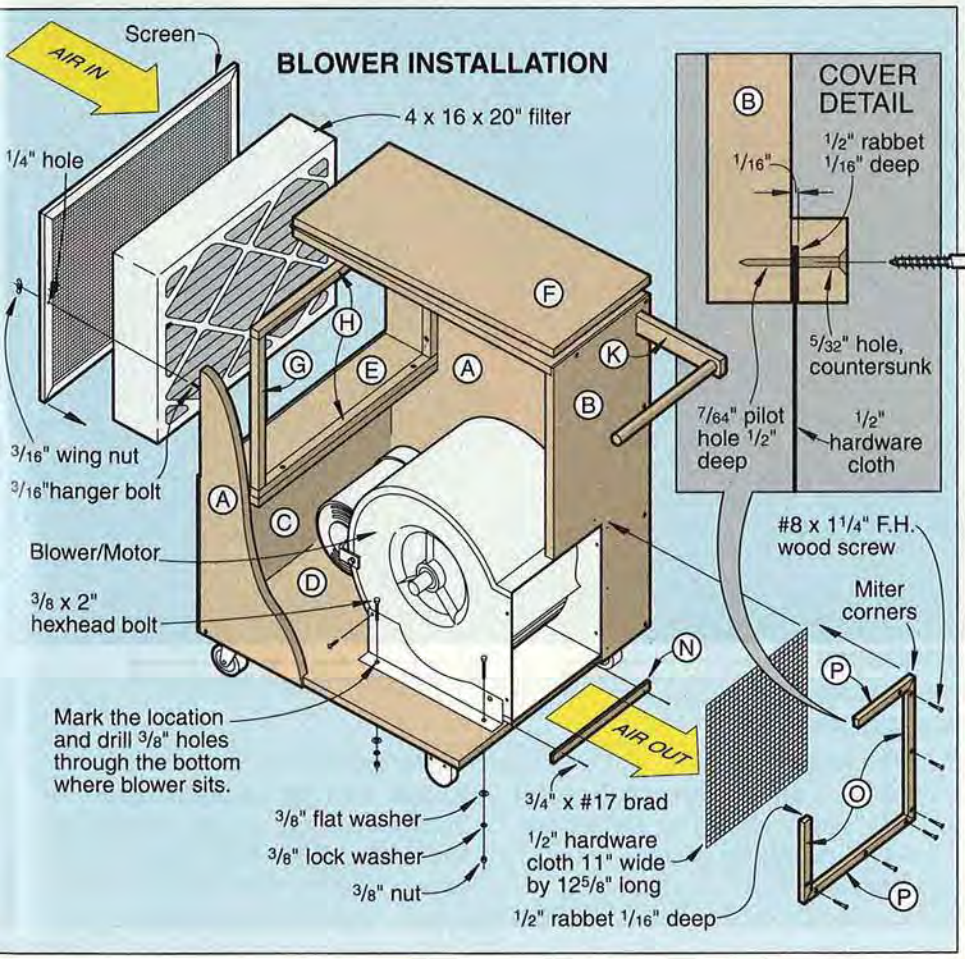
5 Drill a pair of mounting holes where shown on the Exploded View drawing, and drive the 3/16" hanger bolts into the holes. You'll use the bolts later for attaching the aluminum screen.

6 Cut two pieces of stock (we used birch) to ½×¾×30" for the hardware-cloth cleats (O, P). Cut or rout a ½" rabbet 1/16" deep along one edge of each cleat where shown on the Cover detail accompanying the Blower Installation drawing. Miter-cut the four cleats to length. Drill countersunk mounting holes for attaching the cleats to the cabinet later.

Painting and final assembly

1 Fill any voids if necessary, and sand the cabinet and cleats (O, P) smooth. Remove the hardware, and prime and paint the cabinet.

2 Using a clear finish, seal the handle assembly, base and feet, and cord bar.



Drill holes into the blower housing, using the existing holes in the blower bracket as guides.

3 Insert the handle arms (J) through the handle openings in the back (B) and the handle guides. Working from the inside of the cabinet, glue 1¼" long dowels into the holes in the ends of the handle arms where shown on the Exploded View drawing.

4 Attach the cord bar where shown on the Exploded View.

5 Cut the hardware cloth (screen) to size, and attach it to the cabinet with the side and top cleats. Set the bottom cleat aside.

6 Have an aluminum-framed screen made to cover the air intake opening. (Our framed screen measures 16¼×21"; we had it made at a hardware store.) Drill a pair of ¼" holes through the screen to mate with the 3/16" hanger bolts in the cabinet.

7 Screw the switch/receptacle box to the inside of the cabinet. Wire the toggle switch to the motor and outlet cord as shown on *page 74*, and attach the cover plate. Insert the filter into the opening and fasten the framed screen in place. Lower the cabinet onto the base. Screw the cabinet to the base, and add the lower hardware cloth cleat.

Continued on page 74

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: Wm. Hopkins
Illustrations: Kim Downing

CANDY-STRIPED

TOOLS AND SUPPLIES

Stock
2¼ × 2¼ × 20″ turning square for each rolling pin. (For Colorwood, as shown *above,* see the Buying Guide, *opposite page.*)

Lathe tools
Spur-type drive center; tail center
1–1¼″ skew chisel; ⅜–½″ gouge
¾–1¼″ roughing gouge
⅛″ parting tool

Print this article

Lathe speeds
Rough turning: 600–900 rpm
Finish turning: 1,200–1,500 rpm
Sanding: 1,200–1,500 rpm
(Speeds near these will work.)

ROLLING PINS

To achieve the striking results shown, we turned our rolling pins from Colorwood, a plywood built with dyed laminations. See the Buying Guide to order Colorwood by mail. Of course, you also could laminate your own blank or turn the pins from solid stock.

First, make it round

Draw diagonal lines to locate the center on each end of a 2¼ × 2¼ × 20″ turning square. Mount the square between a spur-type drive center at the headstock and a revolving (live) center at the tailstock.

With your roughing gouge, round the square to 2″ diameter. True the cylinder with your skew chisel. Now, decide which of the three rolling pins—straight, straight with ball handles, or tapered—to make first. We suggest starting with the straight one.

Almost done with one!

If you start with the straight French-style rolling pin, you don't have much work left to do. Gauge the turning at several points with calipers to ensure a constant diameter, and lay a straightedge along its axis to check for waviness. A true cylinder makes the best rolling pin.

With your parting tool, cut in ¾″ deep 1″ from each end of your turning, leaving 18″ between the cuts. Turn supporting tenons on the waste ends, and then round over the corner on each end of the rolling pin with your skew. (See the pattern at *right.*)

Sand with progressively finer sandpaper from 100- to 400-grit, using a sanding block to avoid making waves in the surface. Apply clear polyurethane finish.

After the finish dries to the touch, remove the rolling pin from the lathe. When it's ready to handle, saw off the supporting tenons. Sand and finish the ends.

Now, turn the tapered type

For the tapered French rolling pin, mount a turning square on your lathe as above, and then round it down to 1⅝″. Establish the ⅞″ diameter at each end where shown by cutting in with your parting tool ⅜″ deep ½″ from each end of the turning.

Midway between those marks, cut in 1/16″ to set the center diameter of 1½″. Now, using a 1″ or 1¼″ skew, form a smooth taper toward each end. Avoid bringing the rolling pin to an abrupt peak in the center. Rather, turn a straight-sided cylinder at the center, and then begin the gentle taper down to each end.

Sand, finish, and part the rolling pin from the lathe as above.

Try the one with handles

A straight pin with ball handles completes the set. Start this one by rounding your square down to 1⅞″ with your roughing gouge and skew chisel.

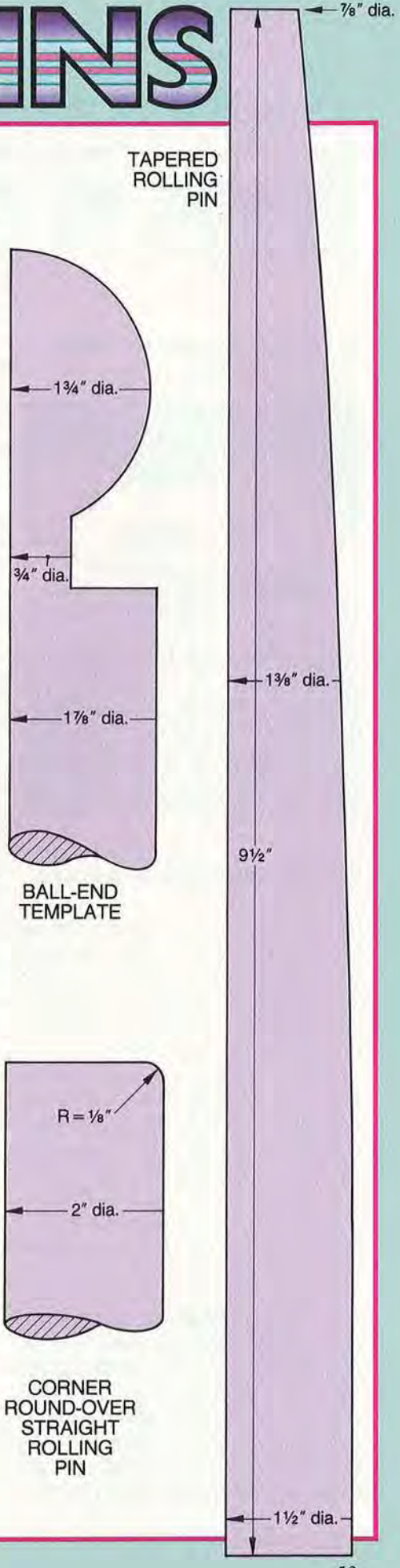
Next, lay out the segments for the handles. With the lathe running at a slow speed, make pencil marks ½″, 1⅜″, 2¼″, and 2⅝″ from each end of the turning. Between the two innermost marks on each end, cut in 9/16″ to define the ¾″-diameter handle tenon. At the next mark, cut in 1/16″ to establish the handle diameter of 1¾″. On the outside of each outer mark, turn to about ½″ diameter with a skew or gouge.

Turn the handles and tenons to the profile shown. Then, sand, finish, and part off as before.

Buying Guide

- **Colorwood turning square.** Multicolored turning square 2¼ × 2¼ × 20″, $19, or three for $40, ppd. in U.S. Pine Hill Crafts, P.O. Box 268, Weston, VT 05161. No telephone orders, please.

Project Design: Marlen Kemmet
Photograph: John Hetherington



Print this article

SHINING STARS PROVEN PRODUCTS FROM OUR IDEA SHOP™

A radio/tape player that can handle the dust

Many of us enjoy listening to our favorite tunes as we tinker away in our workshops. Unfortunately, fine dust can infiltrate and damage most radios or cassette tape players. That's why we chose the Sony Model CFS-902 Radio Cassette-corder. Sony engineers designed this machine to be water- and dirt-resistant for use at places such as a sandy beach or pool area. But, its debris-shedding features make it adept in a workshop, too. To seal out contaminants, Sony has installed switches with rubber boots, and a sealed cassette door. The radio/tape player measures 5⅛ × 8 × 17⅜", weighs 5 pounds, and runs on house current, six C-size batteries, or your car's cigarette lighter (with an optional cord). We paid $65 at a local electronics store.

Sturdy, retractable storage

Like a vine in the jungle, an air hose lying on the floor of your shop can trip you up if not stored after using it. You could drape it over a wall-mounted bracket, but that takes time and effort.

To control our air hose we decided on a spring-loaded, all-steel, retractable reel: the Reelcraft Model 4435 OLP. The spring on this model disengages after you pull out the necessary length of hose, and reengages when you give a slight tug on the hose. It comes with 35' of ¼" hose.

Note: *We attached the reel to iron piping that connects with a compressor on the other side of the wall in the photo* right. *We also added a regulator and moisture trap. We mounted a clip (the type used for broom handles) to the wall to hold the air-hose nozzle.*

The Reelcraft Model 4435 OLP sells for $165 ppd. from Reelcraft Industries, 2842 E. Bus. 30, P.O. Box 248, Columbia City, IN 46725-9987. Call 800/444-3134.

Positioner holds your carvings rock steady

To set up the Junior Work Power Arm Positioner, you first attach it to your workbench, or to a base that clamps to a work surface. After screwing the base of your workpiece to the Positioner, you can rotate the carving 360°, tilt it 90°, and then lock it steadfastly into position with a fast-acting, sliding knob. The product has sturdy, well-machined metal components that adjust for wear. It has a capacity of 30 pounds.

The item no. 135001 Junior Work Power Arm Positioner and Bracket sells for $96.90 ppd. from Wood Carvers Supply, P.O. 8928, Norfolk, VA 23503. Call 800/284-6229. For technical advice call 804/583-8928.

Lathe chuck does many jobs

When deciding on a chuck for our shop's lathe, we looked for a versatile, easy-to-use, and well-built model. We settled on the Nova Chuck.

The four-jaw Nova Chuck comes with a set of 2" external collets that expand into a 2–3" dovetailed recess in the base of your turning project. The product also serves as a spigot chuck on

WOOD magazine's IDEA SHOP

Putting together *WOOD*® magazine's IDEA SHOP provided us with one eye-opening experience after another. As we searched for ways to make our shop more efficient, we ran across all sorts of nifty tools and supplies. And though we've used a few of these products before, most were brand-new to us. Naturally, we thought we should share these items with you. Hopefully, you'll find them just as handy in your own shop.

1¾–2 9/16"-diameter round stock and square billets with sides measuring 1 9/16–2". With the collets removed, the chuck grips work as small as 5/16". With no disassembly you can attach its accompanying screw chuck. You can adapt the chuck from lathe to lathe with inserts costing $21–$22.50 each. Other available accessories, such as small-jaw and cole-jaw sets, add to the tool's versatility.

Depending on your lathe, you'll spend $170–$175 plus $6 shipping for the Nova Chuck. We ordered ours from Woodcraft, 210 Wood County Industrial Park, P.O. Box 1686, Parkersburg, WV 26102-1686. Call 800/535-4486 for more information, or 800/225-1153 to make a purchase.

When ordering, be sure to have the make and model of your lathe handy, along with its spindle diameter and threads per inch.

Hold-downs roll along to help you work safely

We've tried most of the anti-kickback hold-downs on today's market, and we prefer the system available from Leichtung Workshops. Like other similar products, the Leichtung Anti-Kickback Hold-Downs effectively hold your workpieces against the table and fence of your tablesaw, radial-arm saw, or router table. However, we've found the Leichtung system more versatile, more easily adjustable, and less obstructive than competitive hold-downs.

You can adjust the two independent guides to be as close or far apart as you desire. The hold-downs will handle stock as small as ¼" thick and ¼" wide.

We also like the product's reasonable price: $49.99 for two guides plus shipping ($5.99 for orders between $30 and $75, or $6.99 for orders over $75). For more information, or for a free catalog, write Leichtung Workshops at 4944 Commerce Parkway, Cleveland, OH 44128. To order, call 800/321-6840.

One intelligent level

Although most of us have become quite comfortable with a bubble level, these traditional tools do have limitations. Unlike a typical bubble level, the Pro Smartlevel from Wedge Innovations measures all angles, not just level and plumb. And, you can remove the 8"-long electronic module from the Pro Smartlevel and use it to measure table and blade angles on many of your woodworking machines. The module recalibrates itself to "zero" or level on any surface with the push of a button, allowing you to measure the angle of two neighboring surfaces (a jointer's table and fence, for example), neither of which must be truly plumb or level.

The level also measures percent of slope and rise/run. You can adjust its accuracy to within .1° or .2°. The module runs on a 9-volt battery, and can be used as a torpedo level or locked into the handholds of 24", 48", or 78" aluminum rails. Our 24" rail with module sells for about $100.

For more information on various models and the name of your nearest dealer, write Wedge Innovations, 2040 Fortune Drive, Suite 102, San Jose, CA 95131. Or call 800/762-7853.

Levelers simplify router-table construction

Here's the slickest system we've seen for installing an acrylic router plate in a router table. To use Stay-Tru Plate Levelers from Woodhaven, you simply cut a hole into your router table that matches the shape of the acrylic plate. Then, you mount one leveler on each of the four sides of the hole. After placing your router and plate into the hole, you use two screws on each leveler to adjust the plate perfectly flush with the top of the router table.

The levelers work on tables 1 1/16–1⅜" thick, but can be modified to fit slightly thinner or thicker tables. A set of four levelers costs $12.99 plus postage ($3.50 for orders under $50) from Woodhaven, 5323 W. Kimberly, Davenport, IA 52806. Call 800/344-6657 or 319/391-1279. If you don't care to make your own acrylic plate, Woodhaven sells those, too.

Continued

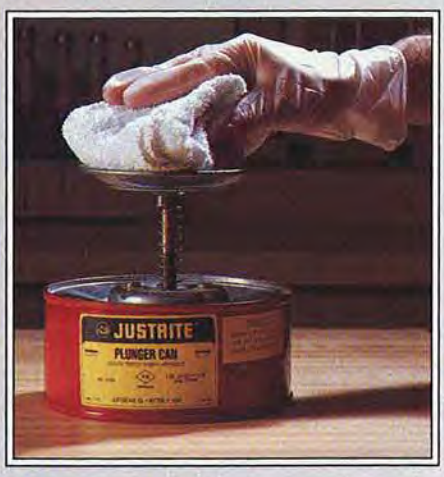
SHINING STARS

A safe and convenient way to dispense solvents

How many times have you tried to pour mineral spirits, lacquer thinner, or some other solvent onto a rag only to wind up with the solvent on your workbench, workshop floor, or even yourself? Justrite, a manufacturer of safety equipment for hazardous liquids, has a solution.

The company's model 10108 plunger holds up to one quart of solvent. Its spring-loaded pan fills with solvent when you push down on it with a rag. So, you quickly moisten the rag as necessary, with no spilling. When you lift the rag off the pan, the pan springs back up and the remaining solvent flows back into the reservoir, where it is safely confined until needed again.

The model 10108 lists for $40.70, with other sizes and types available. For the location of your nearest dealer, write to Justrite Manufacturing Co., 2454 Dempster St., Des Plaines, IL 60016. Or call 708/298-9250.



An attractive solution for tool storage

Of all the hand-tool organizers we've tried, none top magnetic tool holders for hassle-free organizing and retrieval. These strips tenaciously hang on to saws, chisels, hammers, and other tools.

You can purchase a 24"-long model with two steel eyes 16" on center for $18.95 plus postage (the price drops to $16.95 each if you order three or more). Write to: Woodcraft, 210 Wood County Industrial Park, P.O. Box 1686, Parkersburg, WV 26102-1686. Call 800/225-1153 to order. One note of caution: Don't hang anything from these holders, such as small screwdrivers or pliers, whose performance might be hindered from becoming magnetized.

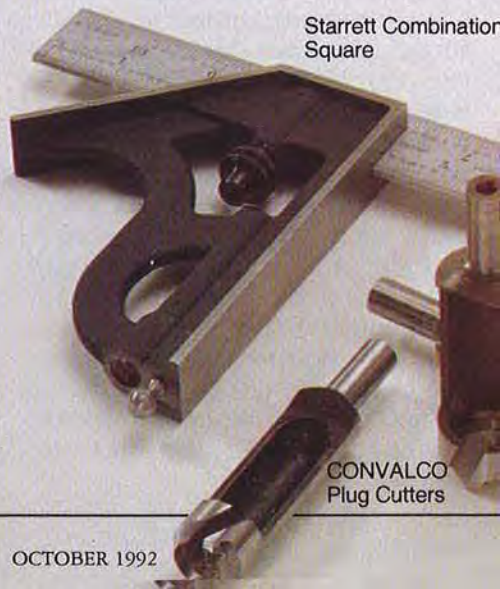
The best combination squares we've run across

If you think there's little difference between combination squares, then you haven't tried one made by Starrett, a producer of high-quality precision tools. These tools feature dead-on accuracy, and a satin-chrome finish that makes it easy to read even the 1/64" graduations. The components are ground to exacting tolerances so they slide without excessive play, and they fit together well when tightened down.

You can buy combination squares in 4", 6", and 12" sizes, as well as various accessories such as center and protractor heads, from Woodcraft, 210 Wood County Industrial Park, P.O. Box 1686, Parkersburg, WV 26102-1686. Call 800/225-1153 to order or for their catalog.

Long plug cutters make more than just plugs

Most plug cutters on today's market work fine for cutting plugs of ½" length or shorter. For cutting

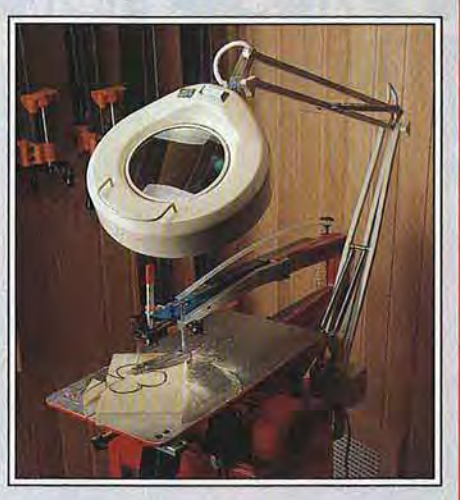


Organizers bring order to cluttered drawers

Small items such as carving accessories and painting supplies can quickly make a jumbled mess inside your workshop drawers. To help keep these items neatly grouped for easy retrieval, we placed Rubbermaid drawer organizers inside the shallow drawers of our rolling tool cabinets.

The reasonably priced plastic organizers come in various shapes so you can customize them to suit your tools and drawer space. You can purchase Rubbermaid products at most discount stores; we bought ours at K Mart.

A magnifier lamp for magnificent results



For help in cutting finely detailed patterns, we mounted a magnifier lamp onto our scrollsaw. The lamp uses a 22-watt circular fluorescent tube that provides plenty of task illumination. The 5"-diameter lens magnifies your pattern 175 percent. These features lessen eye strain, making it easier for you to follow pattern lines. Plus, you can move the lamp in or out of your way in a jiffy, letting springs hold its 45" arms where needed.

To get your magnifier lamp, send $84.90 ppd. to Advanced Machinery Imports, P.O. Box 312, New Castle, DE 19720. Call 800/648-4264. This is a special price for *WOOD* magazine readers that ends November 30, 1992.

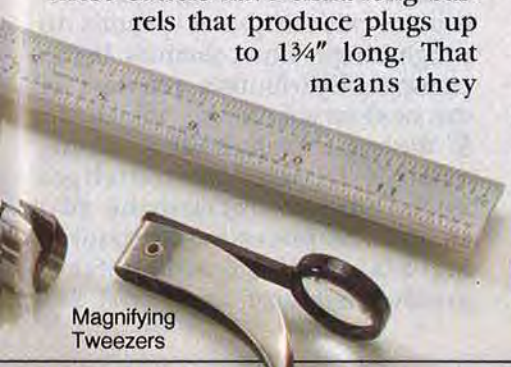
These mats give your legs welcome relief

Standing in one place for a length of time can cause foot, leg, or back pain, particularly on cold, hard concrete floors. So, we placed antifatigue mats in front of the scrollsaw, lathe, and workbench. The ⅜ × 27 × 36" cushioned sponge-vinyl mats also give you secure footing during those times when a fine coating of sawdust might trip you up by making the floor slippery.

You can buy these mats for $19.95 plus handling from The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374-9514. Call 612/428-2199.

longer plugs, we chose a set of no. 100 Heavy-Duty Wood Plug Cutters from Connecticut Valley Manufacturing Co. (CONVALCO). These cutters have extra-long barrels that produce plugs up to 1¾" long. That means they also work great for cutting round tenons on the ends of chair legs and rungs, and other such parts.

You can choose from six models that cut plugs in these diameters: ⅜", 7/16", ½", ⅝", ¾", or 1". Prices range from $22.16 to $38.42 each, plus shipping. Write to CONVALCO, P.O. Box 1957, New Britain, CT 06050. Call 203/223-0076.


Magnifying Tweezers

Tweezers that give you the upper hand on splinters

It's no fun doing battle with a stubborn splinter, but here's an inexpensive tool that will help you win these skirmishes. The Magnifying Tweezers has an attached 6-power magnifier that helps you locate even the tiniest of splinters. The lens is set at the right focal length from the tips of the tweezers, so you don't have to spend time trying to focus.

The Magnifying Tweezers sells for $4.95 plus shipping from Garrett Wade, 161 Avenue of the Americas, New York, NY 10013. Call 800/221-2942.

DRESSER-TOP DELIGHT

While visiting an arts and crafts gallery in Boulder, Colorado, recently, I came across this beautiful bandsawed box designed and crafted by Jerry Patrasso. Jerry, a full-time woodworker from Boulder, specializes in making jewelry boxes with intriguing curved cuts. Having seen lots of bandsawed boxes, I knew this project, with its teardrop-shaped drawers, would be one you would love to build. Happy bandsawing.

Marlen Kemmet
How-To Editor

Print this article

Note: *To start, you'll need a block of wood measuring 4×6×16" to form the box. Since dried wood this thick is quite difficult to find, we used a piece 2×6×32", crosscut it in half, and laminated the two pieces face-to-face. You can either laminate your own stock to form the block or order 2"-thick stock from our Buying Guide source at the end of the article.*

Or, you could also use a photocopy machine with reduction capabilities to reduce the full-sized pattern for a smaller box.

First, add an auxiliary tabletop to your bandsaw

1 Cut a piece of hardboard or ¼" plywood slightly larger than your bandsaw's tabletop to make an auxiliary tabletop. (We suggest that you do this because some of the pieces we first cut on our metal bandsaw tabletop caught in the miter-gauge groove, resulting in crooked bandsaw cuts.)

2 With your bandsaw running, feed the hardboard tabletop into the blade until the wood top is centered over the metal tabletop. Shut off the machine, and adhere the hardboard to the metal tabletop with double-faced tape. *Check that the bandsaw blade is 90° to the auxiliary tabletop, and adjust if necessary.*

Now, laminate your stock, and cut the block to shape

1 Joint one *edge* of a piece of 2×6×32" stock (you'll use this edge as the bottom). Now, plane and sand one *face* of the 32"-long piece of stock flat.

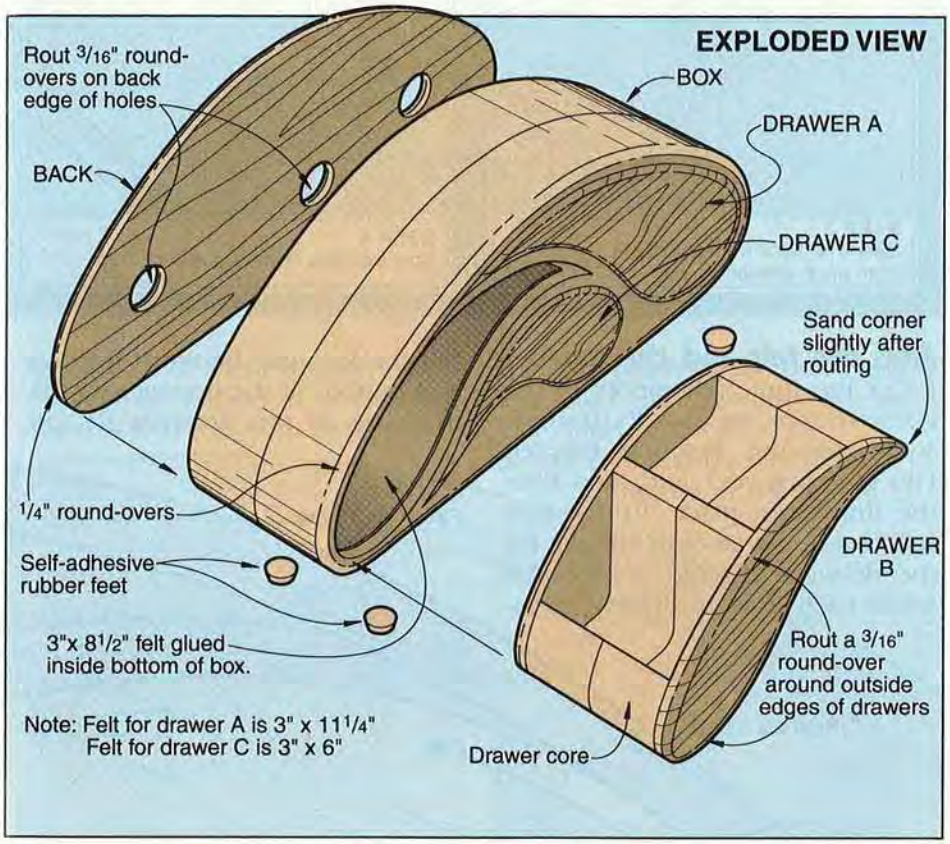
2 Crosscut the block in half.

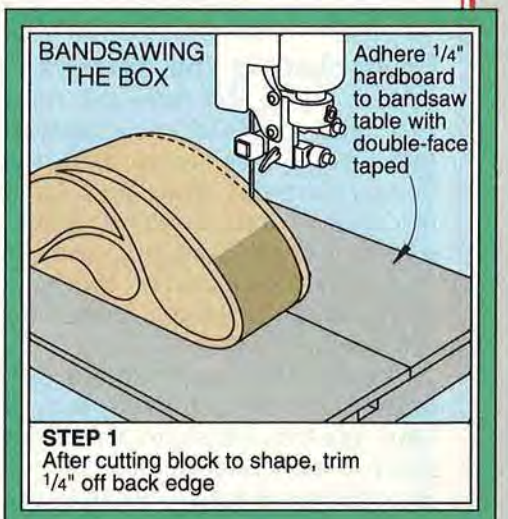
3 Transfer the full-sized box-front pattern to the front face of one of the 2"-thick by 16"-long pieces. (We used carbon paper to transfer the pattern.)

4 Fit your bandsaw with a ¼" blade that has 6 teeth per inch (TPI). Now, bandsaw the piece with the marked outline to shape, cutting about ⅛" outside the marked outline. Then, using the cut piece as a template, mark its outline onto the second piece of stock. (Cutting the pieces to rough shape now, enables better clamping-distribution pressure in the next step.)

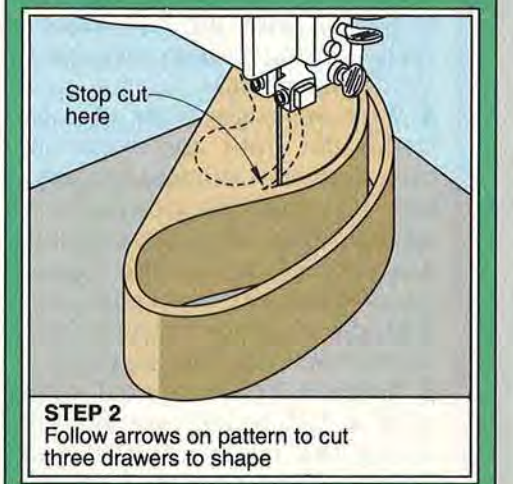
5 With the planed faces mating and the bottom jointed edges flush, glue and clamp the two bandsawed pieces together, forming a 4"-thick lamination. Let it dry overnight.

A BANDSAWED JEWELRY BOX WITH ALL THE RIGHT CURVES


EXPLODED VIEW
Rout 3/16" round-overs on back edge of holes
BACK
BOX
DRAWER A
DRAWER C
Sand corner slightly after routing
1/4" round-overs
Self-adhesive rubber feet
3"x 8 1/2" felt glued inside bottom of box.
DRAWER B
Rout a 3/16" round-over around outside edges of drawers
Note: Felt for drawer A is 3" x 11 1/4"
Felt for drawer C is 3" x 6"
Drawer core



STEP 1
After cutting block to shape, trim 1/4" off back edge



STEP 2
Follow arrows on pattern to cut three drawers to shape

6 Scrape off the glue squeeze-out. Bandsaw just outside the marked outline to cut the top curved surface of the laminated block to shape. Using a stationary sander or belt sander, sand to the line to remove saw marks and finish shaping the curved surface. Sand the bottom flush if necessary.

7 Use a compass to mark a line ¼" in from the back edge of the block. As shown in Step 1 on the Bandsawing the Box drawing, cut on the inside of the line to slice off the back from the block.

8 Transfer the 1"-hole centerpoints for the finger-push openings from the full-sized pattern to the box back. Bore the 1" holes. (We used a Forstner bit.) Rout 3⁄16" round-overs around the perimeter of the 1" holes on the *outside* face of the back piece. Then, sand the bandsawed surfaces of both pieces smooth.

Bandsaw the drawers and openings

1 Switch to a ⅛" 14-TPI bandsaw blade, and cut Drawer A to shape, following the path of Cut 1 on the pattern. After you've completed cutting the drawer, stop the cut where shown on the pattern, and turn the saw off, holding the block still. Carefully work the blade out through the kerf where you started the cut. Remove the drawer from the block.

2 To cut Drawer B, push the nonmoving blade through the kerf left by Cut 1 to the start point of Cut 2. Start the saw, and begin Cut 2 where shown on the pattern. Stop Cut 2 at the pointed end of the drawer. See Step 2 of the multistep drawing for reference. After the blade has stopped, back the blade out the kerf. With the machine still off, back the blade into the entrance kerf for Cut 1, start Cut 3, and finish cutting Drawer B to shape. Stop the machine at the pointed end of the drawer, and back the blade out the kerf of Cut 3. Remove the drawer from the block.

3 To cut Drawer C to shape, make your entrance cut where shown for Cut 4, and exit out the same kerf. Remove the drawer.

4 Inject and spread glue along the mating surfaces at the entrance kerf for Cut 1 and the kerf between Drawers A and B. Glue the kerfs closed. Large spring clamps work best to close the kerfs. Repeat for the kerf used to start Cut 4. Leave clamped overnight.

Continued

Finish shaping the drawers

1 Mark a line 5/16" from the front and back edge of each drawer. (We used a compass to mark the lines.) Cut the front and back from each drawer where shown in Step 3 of the drawing. Sand the bandsawed surfaces of the 5/16"-thick drawer fronts and backs and the drawer cores.

2 Transfer the drawer-cutout outlines from the full-sized pattern (the shaded areas) to the front faces of the drawer cores.

3 As shown in Step 4 of the drawing, cut the drawer-core interiors to shape. Sand the cut edges of each opening smooth (we used a 3/4" drum sander).

4 With the edges flush, glue and clamp the front and back onto each drawer as shown in Step 5 of the drawing. (Notice how we used a scrap block to distribute the pressure across the pointed end.) Wipe off excess glue.

5 Sand each drawer exterior to remove remaining saw marks.

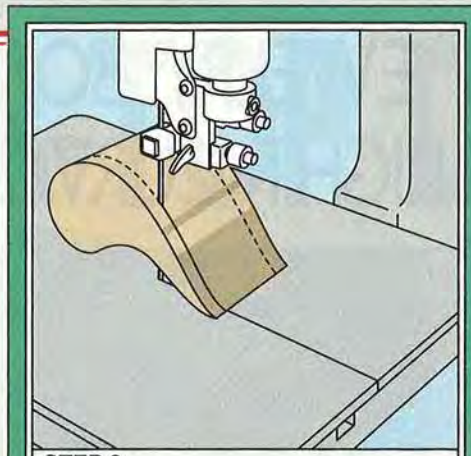
6 Using a table-mounted router with a 3/16" round-over bit, rout along the front edge of each drawer. Sand the pointed front corner of each drawer slightly to break the sharp point.

Next, prepare the box for the drawers

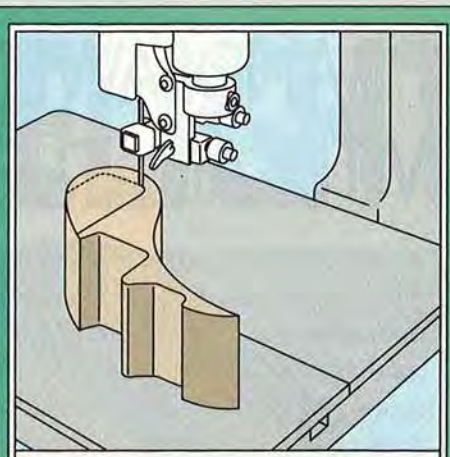
1 As shown in Step 6 of the drawing, glue and clamp the 1/4" back onto the box core.

2 Mark a line 1/4" from the front edge of the box. Bandsaw the front from the box where shown in Step 7 of the drawing. Doing this allows the drawers to protrude 1/4" beyond the front of the box. Sand the cut edges smooth.

3 Rout 1/4" round-overs along the front and back outside edges of the box where shown on the Exploded View. Finish-sand the box and drawers.



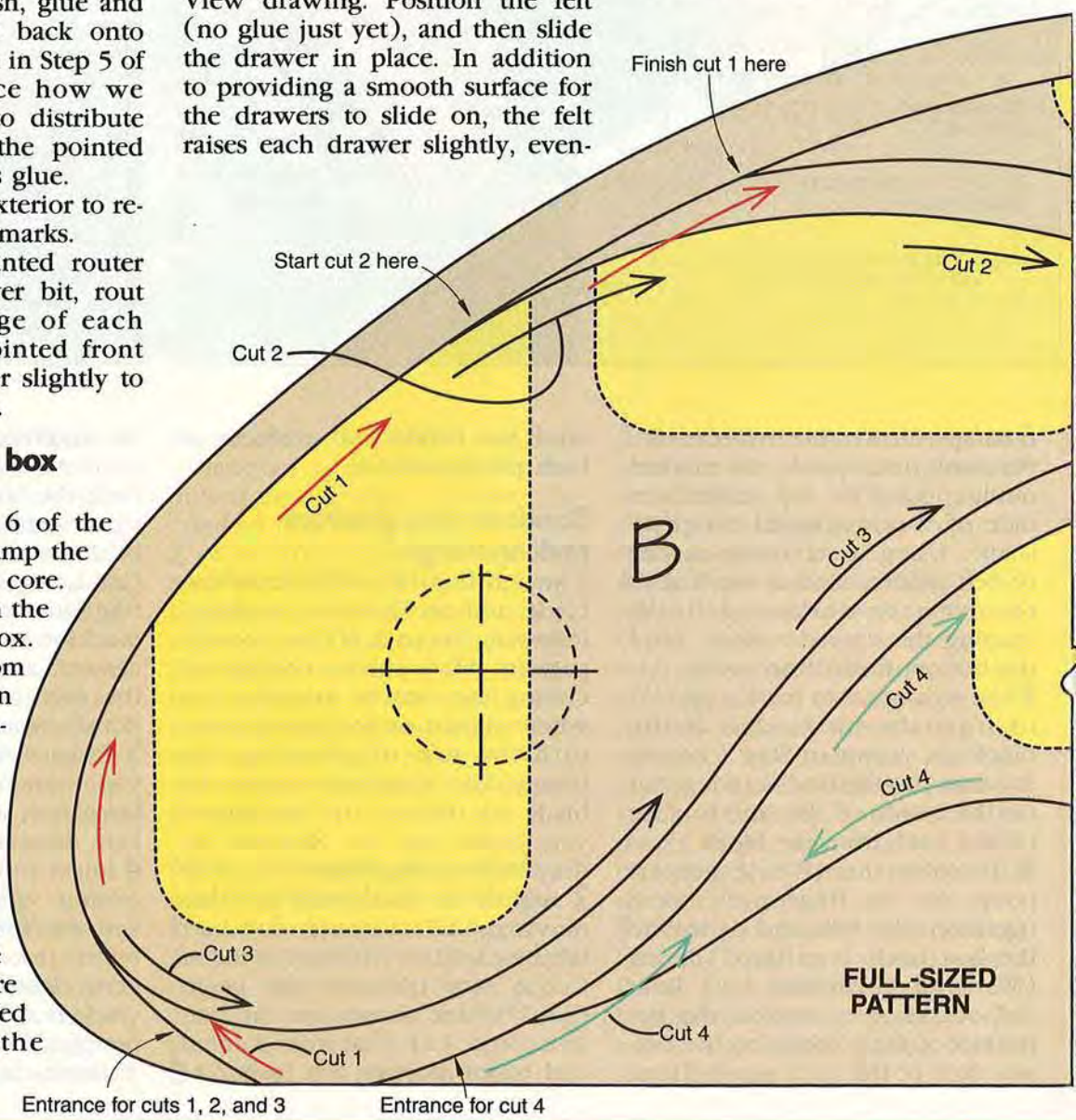
STEP 3
Saw 5/16" thick front and back from each drawer

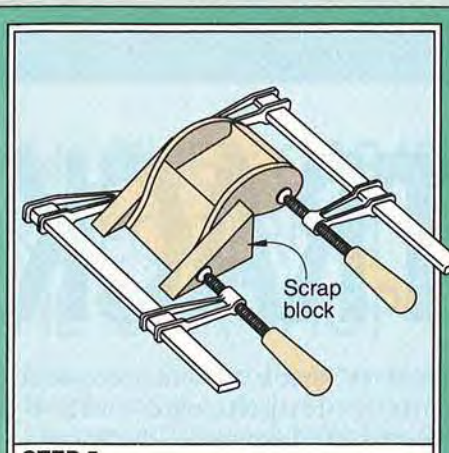


STEP 4
Saw interiors from drawers

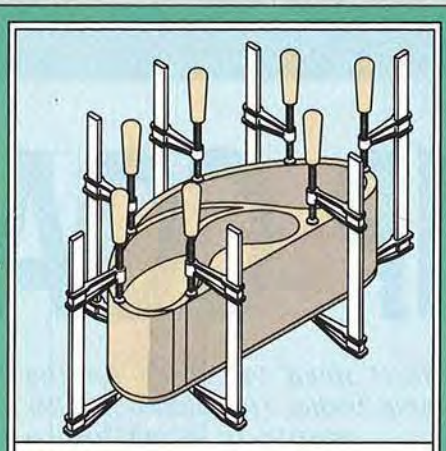
Add the felt and the finish

1 Cut the three felt pieces to the sizes shown on the Exploded-View drawing. Position the felt (no glue just yet), and then slide the drawer in place. In addition to providing a smooth surface for the drawers to slide on, the felt raises each drawer slightly, evening the kerf gap between the top and bottom of the drawer and the opening. If the drawers fit too

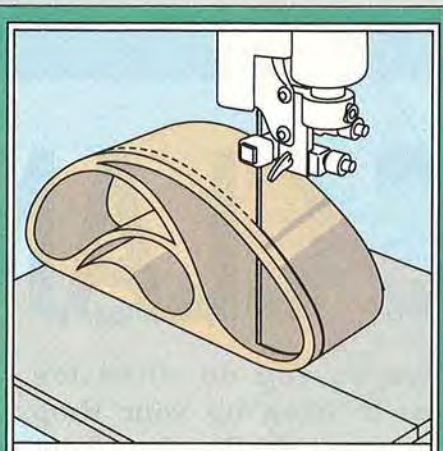




STEP 5
With edges flush, glue front and back to drawer core



STEP 6
Glue the back onto the box



STEP 7
Saw 1/4" from front edge of box

tightly, sand them slightly until they slide easily. Remove the drawers and felt from the box.

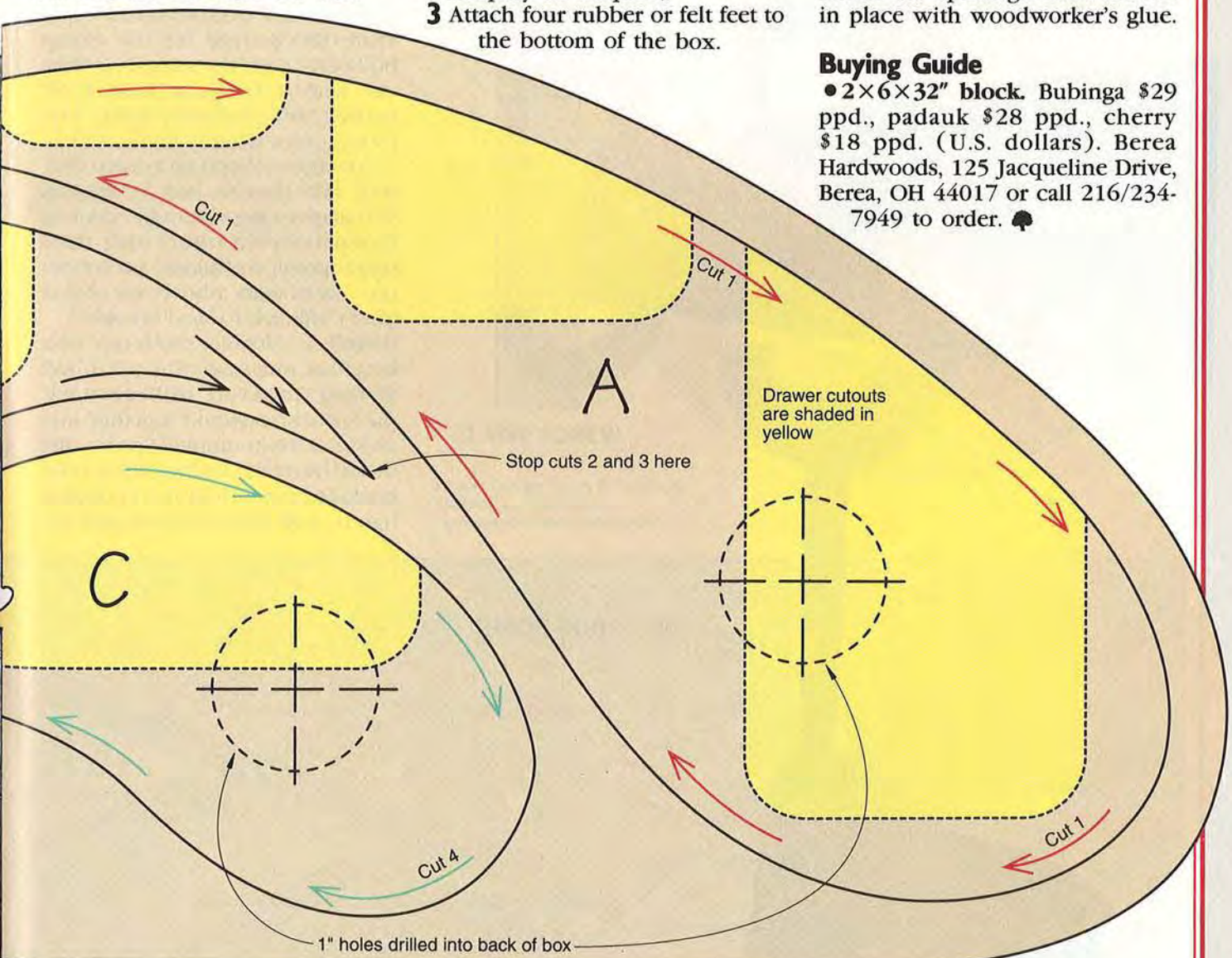
2 Apply finish to the box (inside and out) and drawers. (We used Deft spray-on lacquer.)

3 Attach four rubber or felt feet to the bottom of the box.

4 For better adhesion, sand slightly where you will be applying the felt in the openings. Glue the felt in place with woodworker's glue.

Buying Guide

● **2×6×32" block.** Bubinga $29 ppd., padauk $28 ppd., cherry $18 ppd. (U.S. dollars). Berea Hardwoods, 125 Jacqueline Drive, Berea, OH 44017 or call 216/234-7949 to order.

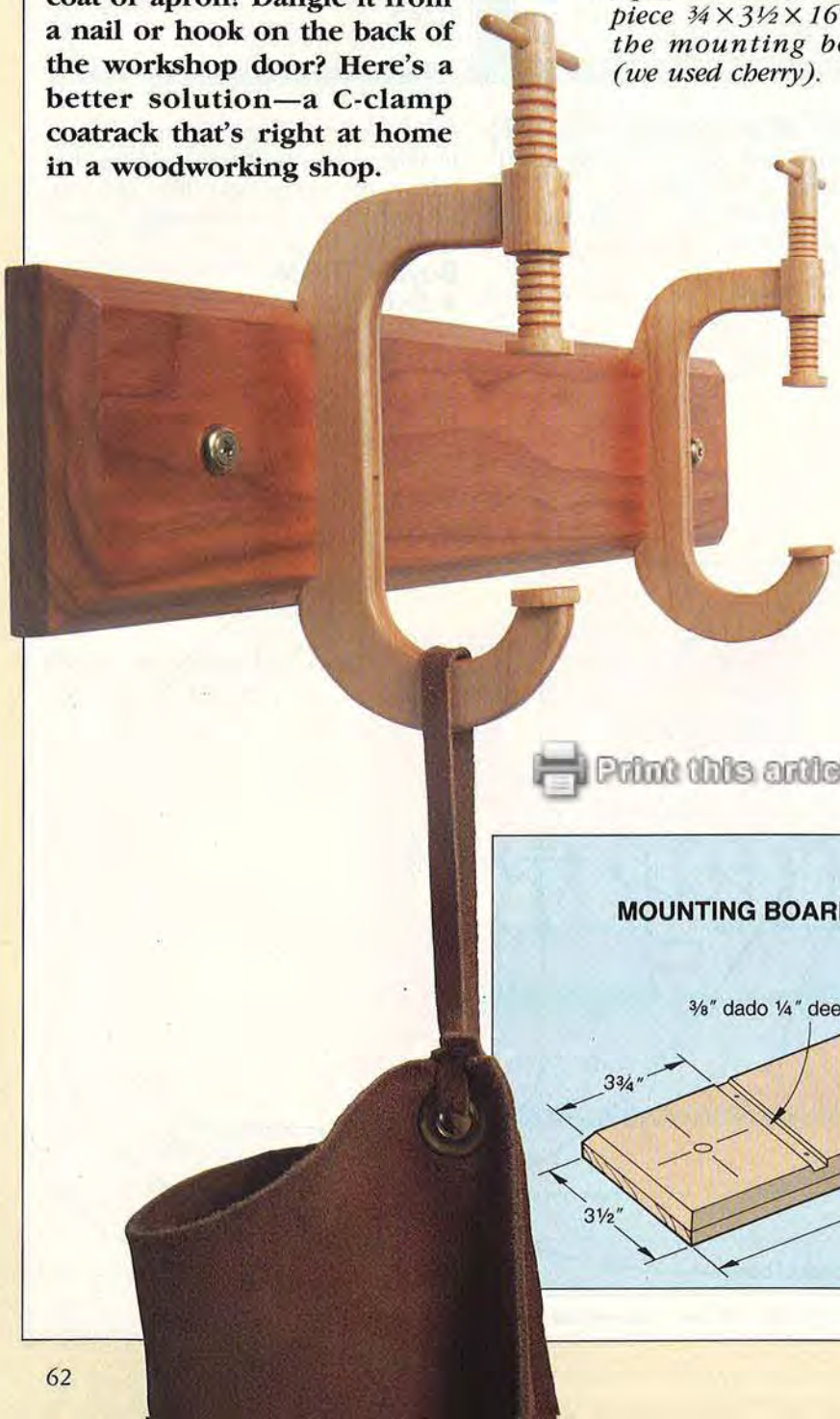


Produced by Marlen Kemmet Project Design: Jerry Patrasso, Boulder, Colorado Illustrations: Kim Downing Photograph: Wm. Hopkins

C-CLAMP COATRACK

What do you do when it's time to hang up your shop coat or apron? Dangle it from a nail or hook on the back of the workshop door? Here's a better solution—a C-clamp coatrack that's right at home in a woodworking shop.

You'll need *⅛" stock for the clamp bodies (we planed thicker maple to size) and a piece ¾×3½×16" for the mounting board (we used cherry).*



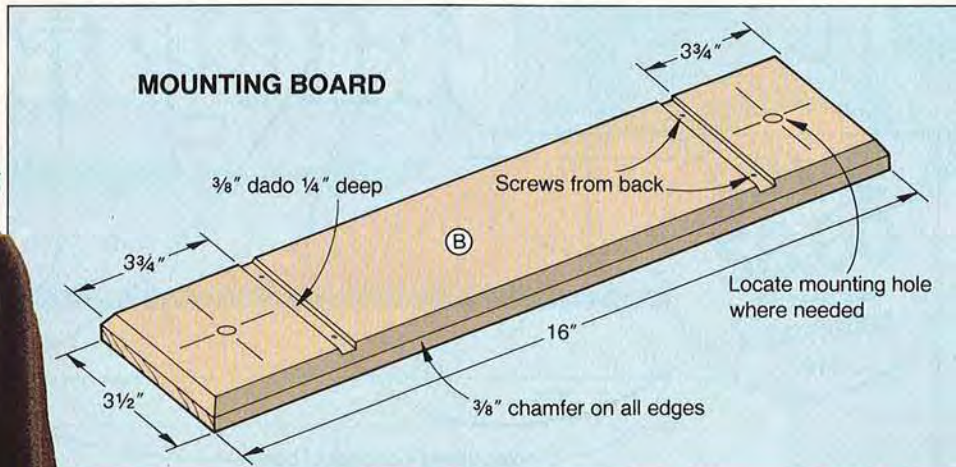
Print this article

From ⅛" stock 4" wide, crosscut four 8" lengths and four 4" lengths. Build two ⅜"-thick laminations, each with two 4" pieces laid edge to edge between two 8" pieces. Run the grain in the center layer at a right angle to the grain on the sides. Glue with epoxy, and clamp.

Stack the two laminations together with double-faced tape. Trace the pattern for the clamp body (A) onto the stack, and then cut with a bandsaw (use a ⅛" blade) or scrollsaw. Sand 1/16" round-overs where shown.

For the mounting board (B), rout ⅜" chamfers and ⅜" dadoes ¼" deep where shown. Glue a clamp body (A) into each dado with epoxy, and secure each from the back with two countersunk #6×1" flathead wood screws.

Drill a ½" hole 2⅛" deep centered on one end of a ¾" dowel 3" long. To do so, nail two 2×3" pieces of scrapwood together into a 3"-tall right angle. Secure the dowel into the corner with double-faced tape. Hold the jig with a handscrew clamp as you drill.



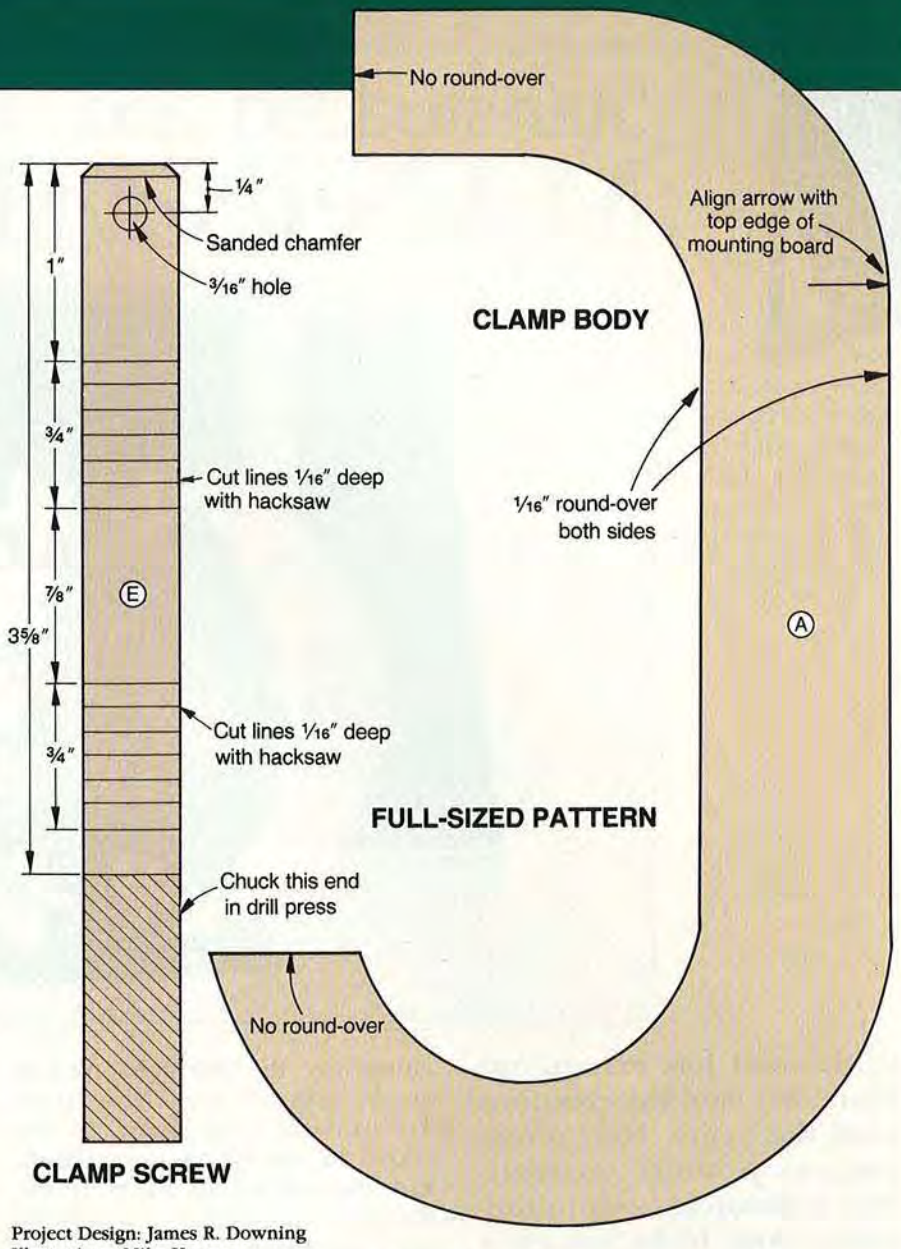
ANOTHER GREAT PROJECT FROM THE IDEA SHOP

Bandsaw or scrollsaw two 7/8" lengths of the drilled-out dowel for parts C. Sand a 3/8"-wide flat side on each. Glue parts C to parts A where shown.

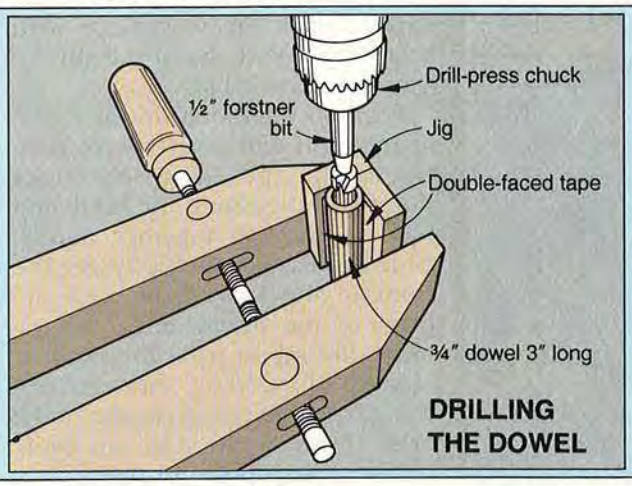
On two 5" lengths of 1/2" dowel, mark the simulated thread lines for parts E where shown on the full-sized pattern. Chuck each length into your drill press. Run the machine at its slowest speed as you cut 1/16" deep at each mark with a hacksaw or triangular file. Then, sand a 1/16" chamfer on the end. Drill the 3/16" hole where shown. Trim to 3 5/8".

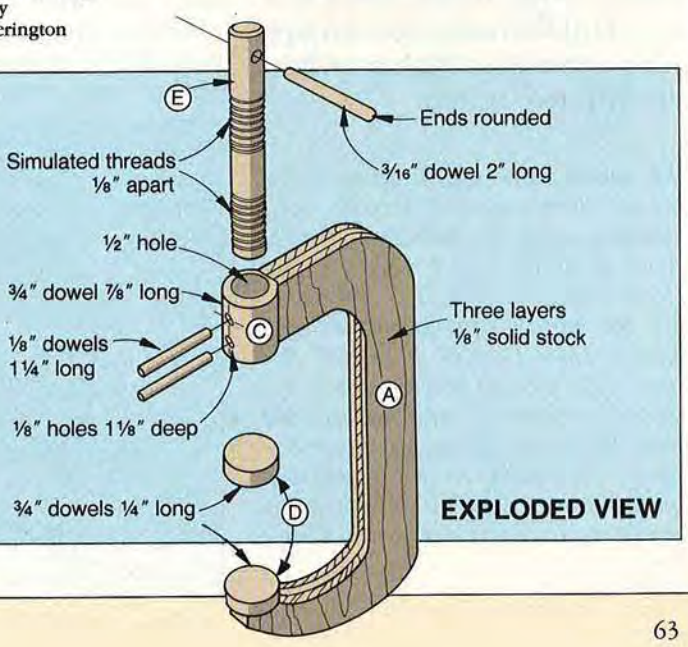
Round the ends of two 2" lengths of 3/16" dowel, and glue one into the hole on each part E. Glue part E into part C, with 1" extending from the bottom of part C and the handle crosswise.

Next, drill 1/8" holes 1 1/8" deep where indicated. Glue 1/8" dowels 1 1/4" long into the holes, and sand the ends flush. Cut four pieces of 3/4" dowel 1/4" long for pads (D), and glue them in place. Finish-sand, and apply a clear oil finish followed by two coats of satin polyurethane varnish.



Project Design: James R. Downing
Illustrations: Mike Henry
Photograph: John Hetherington





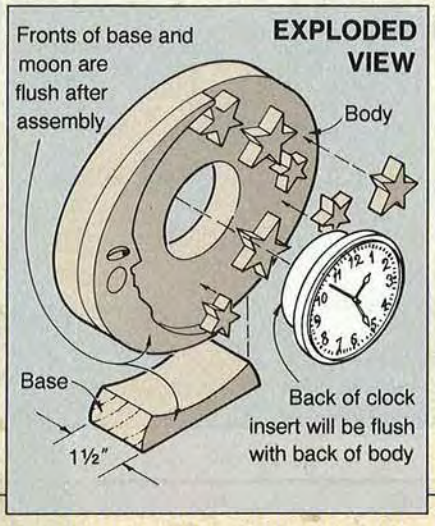
Star-studded and "Gee" rated
MAN-IN-THE-MOON

Hollywood has turned out some star-studded creations over the years. Here's one you can produce yourself. Our whimsical man-in-the-moon clock looks just right in a child's room; grown-ups who appreciate flights of fancy will love it, too.

***We made our clock** from basswood. Pine would work, too, since it will be painted. You'll need a piece ¾×7×8" for the clock body, one that's ⅜×5×7" for the moon and star overlays, and a 1½×1½×6" piece for the base. (We planed thicker stock for the ⅜" material, and laminated two ¾"-thick pieces together for the 1½" base.) A #7 scrollsaw blade, .043×.016" with 12 teeth per inch, will handle the cutting.*

Print this article

Photocopy the full-sized pattern on the *opposite page*. Now, trace the outside oval shape of the body, the clock-hole centerpoint, and the circled numbers inside the stars onto the ¾" board. Next, trace the moon and the stars (including the circled numbers) onto the ⅜" material, and the base outline onto your 1½" stock.


Fronts of base and moon are flush after assembly
EXPLODED VIEW
Body
Base
1½"
Back of clock insert will be flush with back of body

Saw around the body outline, and cut out the base. Then, cut out the moon and star shapes. Notice that star no. 1 connects to the moon—cut them as one piece.

Bore the 2⅜"-diameter hole for the clock insert with a Forstner bit or holesaw chucked into a drill press. Whichever you use, be sure to back the workpiece with scrapwood, and clamp it firmly to the drill-press table.

Position the moon on the body, attaching it temporarily with double-faced tape. Sand the edges flush, and then sand the body and base so they fit together tightly. Glue the base to the body. Set the front of the base flush with the front of the moon, and then remove the moon from the body.

Sand all surfaces. Then, redraw the circled numbers on the body, and number the stars on their backs to help position them.

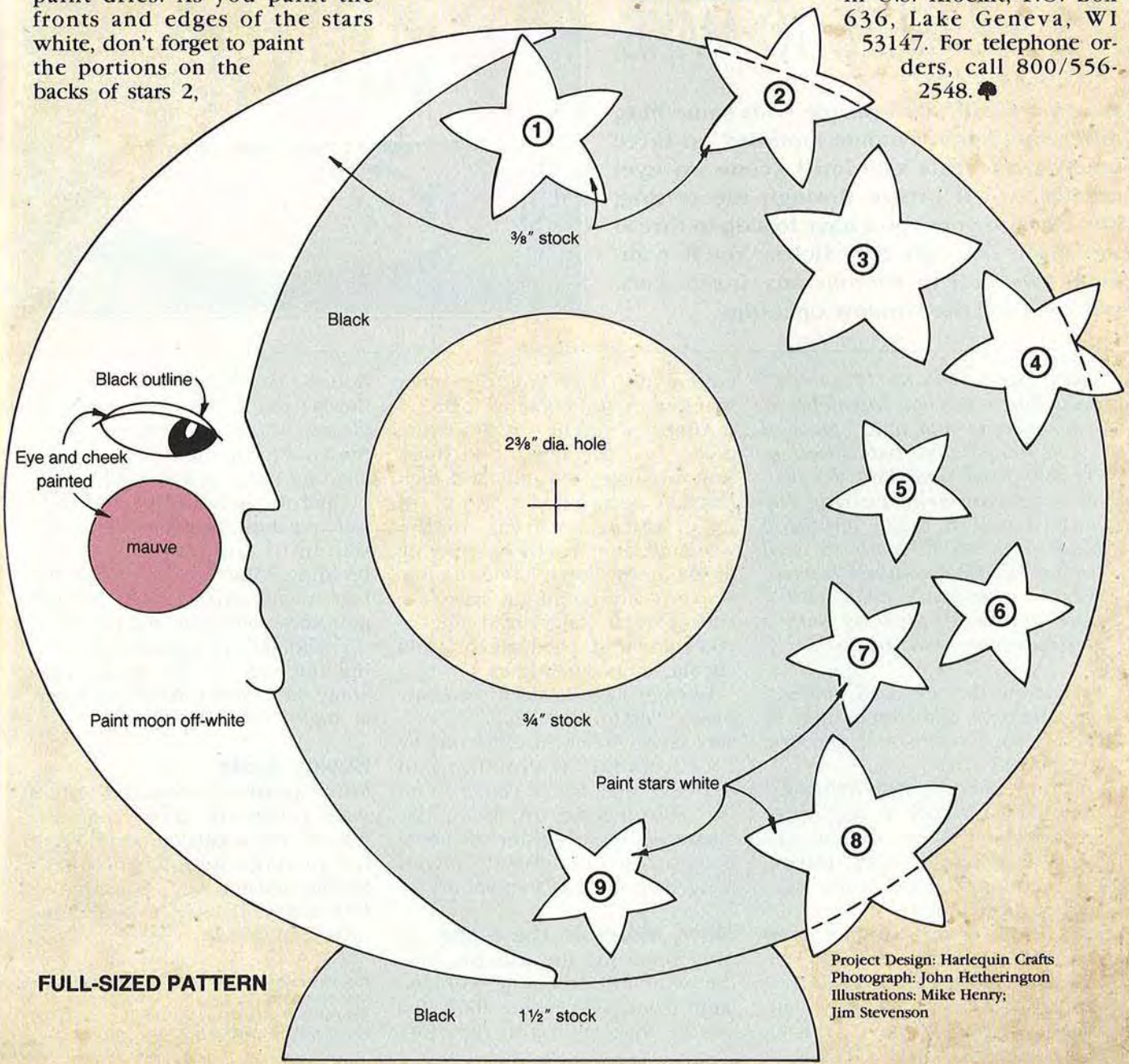
SHELF CLOCK

Paint the body and base black (we used artist's acrylics). Don't paint the circled numbers and the area where the moon will be glued on. Paint the front and edges of the moon off-white. Add the cheek and eye details after the paint dries. As you paint the fronts and edges of the stars white, don't forget to paint the portions on the backs of stars 2, 4, and 8 that extend past the edge of the body. When dry, glue the moon and stars into place.

Later, spray on a semigloss clear finish to protect the paint and add a bit of luster. After the finish dries, install the clock insert.

Buying Guide

Clock insert. Ready-to-install unit with quartz movement, black case and bezel, and black face with white hands and numerals; runs on one type N battery (included). Order item no. 71165, $12 ppd. in U.S. Klockit, P.O. Box 636, Lake Geneva, WI 53147. For telephone orders, call 800/556-2548.



FULL-SIZED PATTERN

Project Design: Harlequin Crafts
Photograph: John Hetherington
Illustrations: Mike Henry; Jim Stevenson

Print this article

OLD-WORLD WINDMILL

IT'S A BREEZE TO MAKE

Here's a scrollsawed plaque with something different—depth. Cutouts mounted on three levels make this windmill scene an eye-catcher. You'll breeze through the cutting, too, because you won't have to stop to thread the blade through tiny holes. You'll complete this project *without* any inside cuts, not even for the window openings.

You'll need *a ⅛×8×10" piece of Baltic birch plywood (available at hobby shops) and a 12" piece of 1×12 rough-sawed cedar. Designers Roy King and Scott Kochendorfer recommend cutting the pattern with a #2/0 scrollsaw blade (.022×.010" with 28 teeth per inch). For smoothest sawing, overlay your saw's table with a piece of smooth plywood with a zero-clearance blade hole.*

Photocopy the full-sized patterns, *opposite page*, and adhere them to the plywood with spray adhesive. Cut out the parts.

When cutting the windmill building (A), start at the upper left window where shown. Cut the four window panes, leaving the muntins attached at the right side of the window.

Back out of the window entry cut, and saw down the left side until you reach the next window entry. Cut as before, back out, and continue around the building, cutting the door and the other window as you come to them.

After you've cut out the entire piece, saw the horizontal lines. Saw in along each line, and then carefully back out.

Cut the open areas on the windmill support (B) by entering on the lines shown along the top. Scrollsaw the windmill sails (C), cutting each long detail line as you come to it. Then, go back and cut the short detail lines.

Change to a heavier scrollsaw blade. Tilt the saw table to 30°, and saw a freeform edge on the 1×12 plaque, maintaining an 8½×8½" area in the center. With the rough side up, keep the plaque on the high side of the table as you saw. Install a wall hanger on back of the plaque.

Now, assemble the scene

After removing the patterns, glue the windmill building (A) and large cloud (G) where indicated on the Plaque Layout drawing. Add the path sides (D and E) and the spacer (K). Next, glue the single tree (I) and double tree (J) to the *back* of the ground line (H), aligning them as indicated.

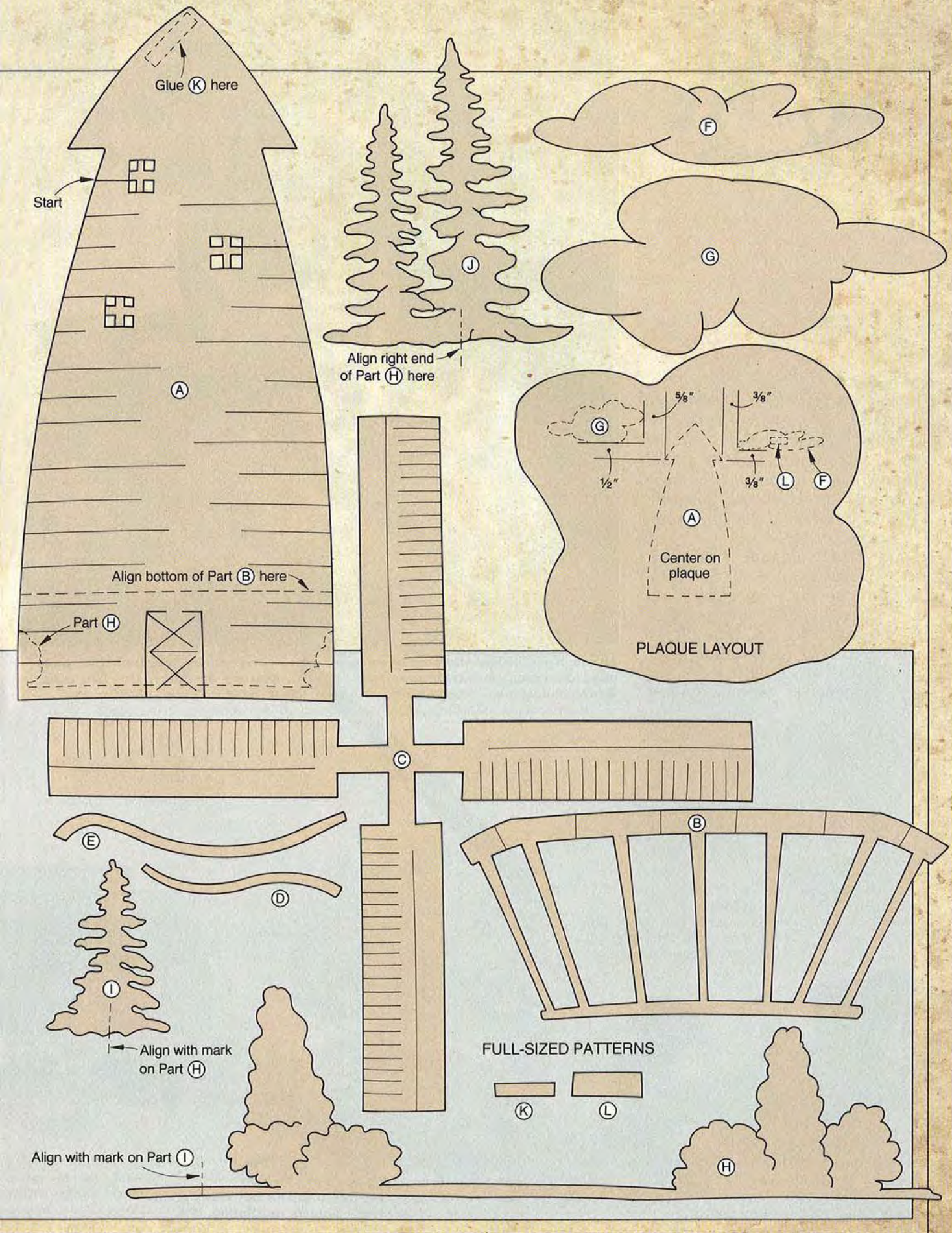
Glue the ground line and trees into position, and then glue the windmill support (B) to the building. Glue spacer (L) to the back of the small cloud (F), and glue these pieces to the plaque.

Complete the assembly by gluing the sails to the spacer (K). Spray on a clear finish from several angles, covering all edges.

Buying guide

More patterns. Scroller offers many patterns in various difficulty ratings. For a catalog, send $1.50 for postage and handling to Scroller Catalog, 9033 S. Nashville, Oak Lawn, IL 60453. No phone orders, please.

Project Design: Scroller, Roy King and Scott Kochendorfer
Illustrations: Mike Henry
Photograph: Wm. Hopkins


Glue (K) here
Start
(A)
Align bottom of Part (B) here
Part (H)
(J)
Align right end of Part (H) here
(F)
(G)
5/8"
3/8"
1/2"
3/8"
(L)
(F)
(A)
Center on plaque
PLAQUE LAYOUT
(C)
(E)
(D)
(B)
(I)
Align with mark on Part (H)
FULL-SIZED PATTERNS
(K)
(L)
Align with mark on Part (I)
(H)

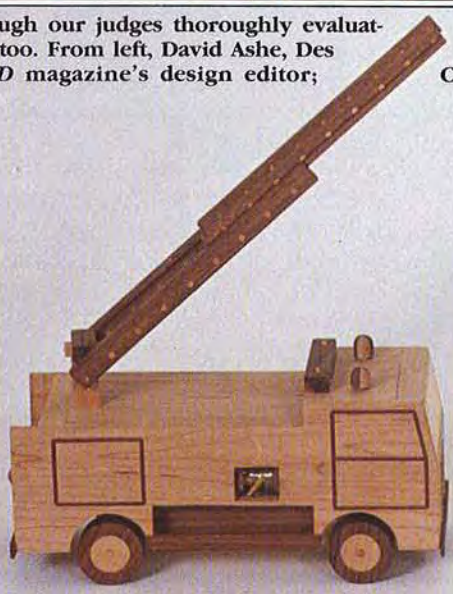
A GREAT CONTEST ...AGAIN!

It was evident, the years hadn't dimmed the enthusiasm of *WOOD*® magazine readers for entering our fourth annual Build-A-Toy® contest. In fact, the entrants displayed more overall imagination, woodworking skill, and variety than ever before.

Entries in the student category have increased since our first contest, but this was the greatest effort yet by young woodworkers from across the U.S. Hats off to you! A special appreciation goes to industrial arts teacher Barry Haley's students at Newark, Ohio's

Print this article

Although our judges thoroughly evaluated entries, they took time out to play, too. From left, David Ashe, Des Moines designer; Jim Downing, *WOOD* magazine's design editor; Capt. Scott E. Nisely, USMC.



Jason Resch, of Bryant, Wis., took student first prize with this fire truck featuring walnut inlay around the doors.

Grand prize, student, went to Newark, Ohio's Wayne Green and his classy walnut steam engine.

Mike Jagielo won first prize, professional, with his turtle pull toy. Also last year's grand-prize winner, Mike builds cabinets in Almond, Wis.

Jim Downing can't keep his hands off the great little take-down workbench of maple and walnut sent in by a home hobbyist. Its drawers and pegboard hold kid-sized tools.

Licking Valley High School. These 12 teenage craftsmen contributed a collective effort of five neat hockey games and five super biplanes destined for underprivileged kids. Two of these students also took top prizes with their individual entries!

Among the pros were a few familiar names who had claimed prizes in past years. Their entries, though, definitely weren't repetitive. And perhaps best of all was the tremendous craftsmanship of our home hobbyists. Their toys were inspirations—applause, applause, please!

Paraded below and on the following page are the grand- through third-prize winners. For the complete list of winners, turn to *page 72*. For the 1993 contest rules, see *page 82*. Press deadlines don't allow us time to present any toy plans in this issue for you to

Continued

Larry J. Weaver's walnut-and-maple version of a John Deere tractor won him a first place among home hobbyists. Larry lives in Petersburg, W. Va.

Home-hobbyist grand-prize winner was Sam Roberts of Roseburg, Ore. Sam's boxful of tiny action toys was original, clever, and a joy to behold.

Neil Seely of Rochester, N.Y., no newcomer to Build-A-Toy, switched from pull toys to a detailed tractor/trailer rig and snatched the pros' grand prize.

A GREAT CONTEST

Paul Kirk, another Newark, Ohio, student, claimed second place among his peers with this laminated coaster wagon.

This duck-in-a-pond puzzle won a third prize in the pro division for Karen Grimm of LaFayette, N.Y.

A moveable-wing warship out of *Star Trek* won the student third prize for Brian Merdian of Herminie, Pa.

An ice cream truck by Fred Conklin, Pine Bush, Nev., took home-hobbyist third.

Home-hobbyist Ken Barkley of North Palm Beach, Fla. captured second place with a dump truck.

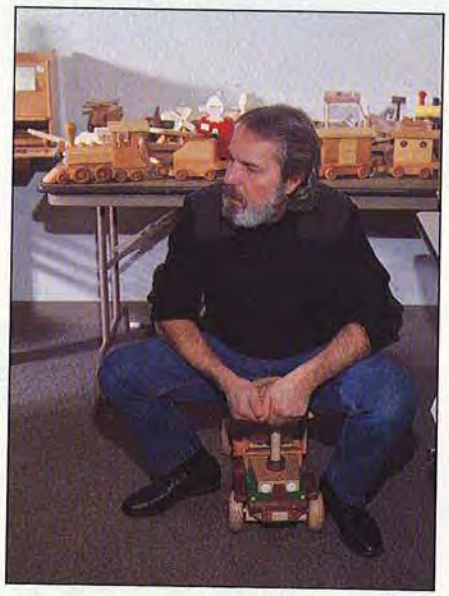
Henry Gorczynski, Buffalo, N.Y., got pro-class second prize with this tugboat.

make any of the 1992 contest toys. Look for selected ones throughout the year.

Our Build-A-Toy mission

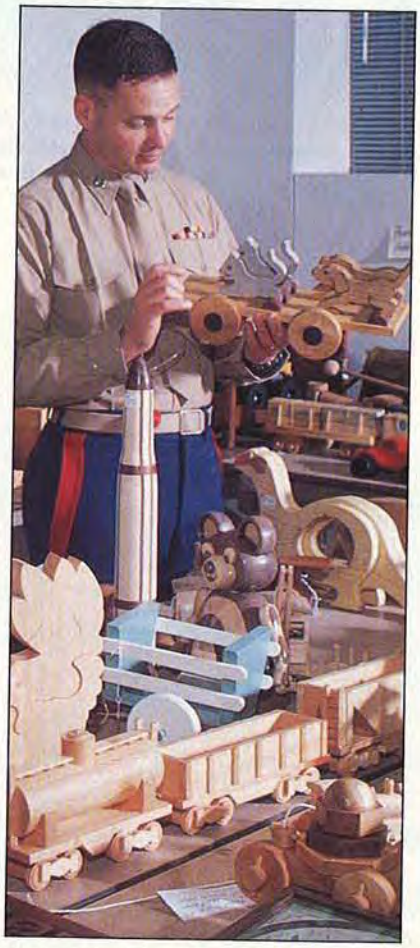
As in the past, the Build-A-Toy contest helps the U.S. Marine Corps Reserve's Toys-for-Tots program. Last year (1991), to assist the Marines in providing toys for a greater number of needy kids, we held an auction of selected toys in Los Angeles that enabled us to buy an additional $12,000 worth of wooden playthings from Vermont's Montgomery Schoolhouse Toy Company.

As you read this, many of the toys entered in Build-A-Toy '92 are on public display in Silver Dollar City, a popular theme park in Branson, Missouri, that features old-time skills and handmade crafts in a setting from yesteryear. In early December, we'll host a celebrity auction there that will raise another tidy sum for the nation's less fortunate youngsters. So again, thanks to all of you caring readers who entered our contest. Best of luck in Build-A-Toy '93.



▲ "I just have to try it out," says David Ashe of the heavy-duty dump truck. David, who designs toys as well as furniture, was an enthusiastic judge during the daylong session.

▶ The U.S. Marine Corps' Capt. Nisely checks out the craftsmanship on a pull toy. On the table before him sit a host of possible finalists in the home hobbyist division. As always in the Build-A-Toy contest, criteria included originality, craftsmanship, finish, safety, durability, and appeal as a toy.



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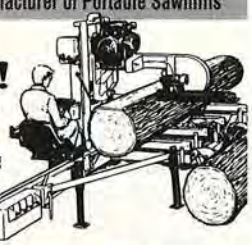

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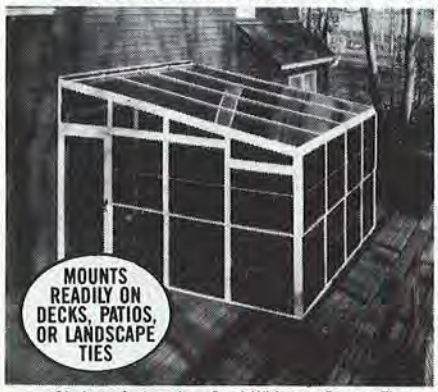

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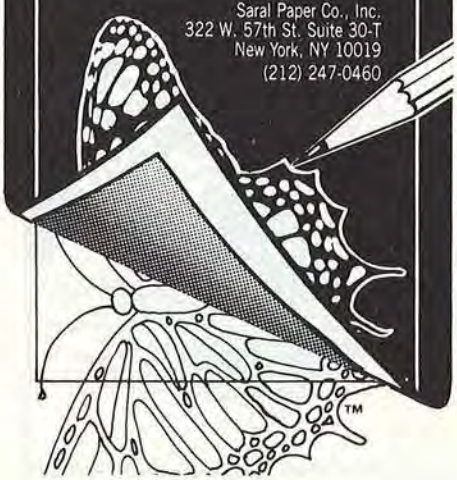
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HERE THEY ARE!

CONTEST WINNERS

BUILD 'A-TOY™

All the finest finishes, best trains, best puzzles—from student, home hobbyist, and pro—here's the winning rundown.

VROOM-VROOM-VAROOM
Among home hobbyists, this racing-team semi, trailer, and car by Tulsa's Bill Jones won the Best Truck award.

STUDENT DIVISION

Grand Prize ($1,000 in Black & Decker merchandise): Wayne Green, Newark, Ohio.

First Prize ($500 Grizzly merchandise): Jason Resch, Bryant, Wis.

Second Prize ($500 Skil merchandise): Paul Kirk, Newark, Ohio.

Third Prize ($500 American Tool Co. merchandise): Brian Merdian, Herminie, Pennsylvania.

HOME-HOBBYIST DIVISION

Grand Prize ($2,500 Delta merchandise): Sam Roberts, Roseburg, Ore.

First Prize ($1,600 Shopsmith Mark V): Larry J. Weaver, Petersburg, W. Va.

Second Prize ($1,000 Ryobi merchandise): Ken Barkley, N. Palm Beach, Fla.

Third Prize ($500 Lobo merchandise): Fred Conklin, Pine Bush, Nev.

PROFESSIONAL DIVISION

Grand Prize ($1,000 AEG merchandise): Neil Seely, Rochester, N.Y.

First Prize ($1,000 Porter Cable merchandise): Mike Jagielo, Almond, Wis.

Second Prize (RBI 16" variable-speed scrollsaw): Henry J. Gorczynski, Batavia, N.Y.

Third Prize (Bridgewood planer from Wilke Machinery): Karen Grimm, La-Fayette, N.Y.

SPECIAL CITATIONS

Best Use of Wood
Student (Turning squares, Adams Wood Products): Jason Resch, Bryant, Wis., firetruck.

Home hobbyist ($100 gift certificate from Woodworkers Supply): Jeffrey P. Starner, Mount Wolf, Pa., baby bed activity board.

Professional ($500 Makita merchandise): Neil Seely, Rochester, N.Y., semi and flatbed backing game.

Best Carved Toy
Student ($500 Dremel merchandise): Casey Benson, Tyler, Tex., doll rocker.

Home hobbyist ($500 Dremel merchandise): John Fink, San Diego, Calif., dancing bear and drummer.

Professional ($500 Dremel merchandise): Robert Benson, Tyler, Tex., Build-A-Toy rocker.

Best Finish
Student ($1,000 Deft merchandise): Jason Resch, Bryant, Wis., black/red car.

Home hobbyist ($500 Minwax merchandise): William V. Trumble, Greats Pass, Ohio, green/yellow tractor.

Professional ($500 Minwax merchandise): Mike Jagielo, Almond, Wis., turtle pull toy.

Best Truck
Student ($100 Klockit merchandise): Jason Resch, Bryant, Wis., fire truck.

ROCK-A-BY-BABY
Casey Benson of Tyler, Texas, won the Best Carved Toy award in the student division with a nifty doll rocker.

DING-DING, DING-DING, DING-DING
The cute little fire truck and crew built by John and Diane Denkinger, Omaha, was chosen Best Pull Toy among home hobbyists.

Home hobbyist ($500 Meisel merchandise): Bill J. Jones, Tulsa, Okla., "Winning Racing Team" semi.

Professional (Brandmark branding iron): Neil Seely, Rochester, N.Y., semi and flatbed backing game.

Best Car

Student ($100 Constantine merchandise): Jason Resch, Bryant, Wis., black/red car.

Home hobbyist (Antique car plans from Toys and Joys): Mark Canales, Gansevoort, N.Y., race car.

Professional (Furniture plans from Furniture Designs, Inc.): R. Perry Mercurio, Kingfield, Maine, jeep.

Best Pull Toy

Student (DML 10" carbide-tipped blade): Suzanne Forman, E. Amherst, N.Y., pull toy.

Home hobbyist (How-To Book Club $100 gift certificate): John and Diane Denkinger, Omaha, Neb., fire truck.

Professional (Woodmaster $100 gift certificate): Mike Jagielo, Almond, Wis., turtle pull toy.

Best Train

Student (Rodale woodworking books): Wayne Green, Newark, Ohio, train engine.

Home hobbyist ($250 Seven Corners merchandise): Joseph D. Herbert, Greensburg, Ind., engine and three cars.

Professional (Milwaukee Electric 4" belt sander): Carl Boop, Levittown, Pa., pine train.

Best Bank

Student: No banks entered in this category.

Home hobbyist (Formby's gift sets): Stephen Forman, E. Amherst, N.Y., cement truck bank.

Professional (DML 10" carbide-tipped blade): Clarence German, Hankinson, N. Dak., heart bank.

Best Airplane

Student ($100 Geneva Specialties merchandise): Michael Bella, Bloomsburg, Pa., space shuttle.

Home hobbyist (Accents in Pine blueprints): Jim Bielema, Fulton, Ill., starship Enterprise.

Professional: No airplanes entered in this category.

Most Number of Toy Entries

Student (ParaGauge from Accuset Tool): Licking Valley High School Manufacturing Class, Newark, Ohio

Home hobbyist ($100 gift certificate Woodworkers Book Club): Robert Sylvain, Granby, Conn.

Professional ($100 Econ Abrasives supplies): Steve Forrest, Sunrise, Fla.

Best Cradle

Student: No cradles entered.

Home hobbyist (Sears Craftsman 20" scrollsaw): Terry and Warren Kaeb, Buckley, Ill., Southwest-style cradle.

Professional (Penn State variable-speed scrollsaw): A. Horowitz, Torrance, Calif., doll cradle.

Best Puzzle

Student (St. Croix Kits thumb piano): Anne House, Arlington Heights, Ill., abstract puzzle.

Home hobbyist (MLCS Master Set): Sylvia Adair Maker, Windsor, Vt., Old MacDonald number puzzle.

Professional (Formby's gift sets): Karen Grimm, LaFayette, N.Y., duck-in-pond puzzle.

Student special toy plane from *WOOD*® plan
($100 books from Woodworkers Book Club): Laurel Ely, Cabins, W. Va.

Home hobbyist/professional best toy from *Wood* magazine All-Time Best Toy Projects
($250 Leichtung merchandise): Mark G. O'Brian, Oakville, Mo., walnut tractor.

Photographs: John Hetherington

PUTT, PUTT, PUTTY-PUT
The judges suspect that William V. Trumble, Greats Pass, Ohio, used dyes to arrive at the John Deere green on his tractor. His work earned him Best Finish in the home hobbyist class.

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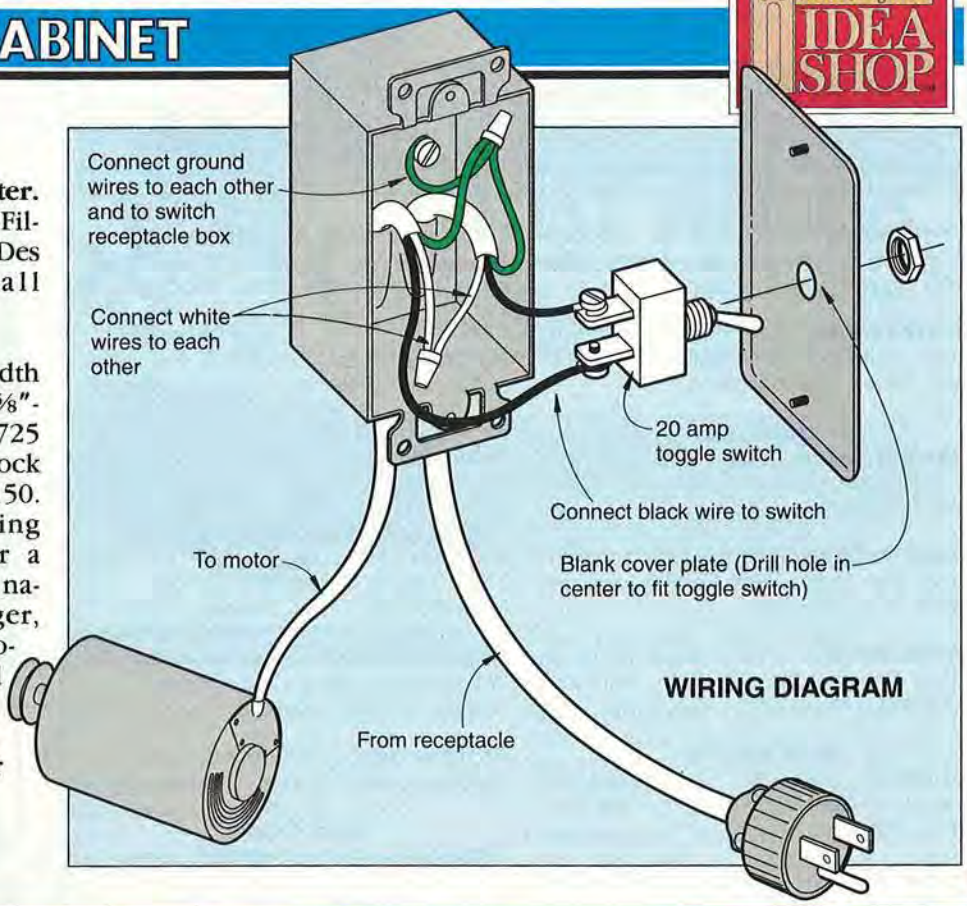
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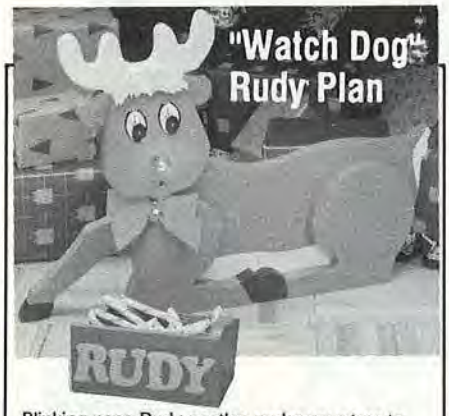

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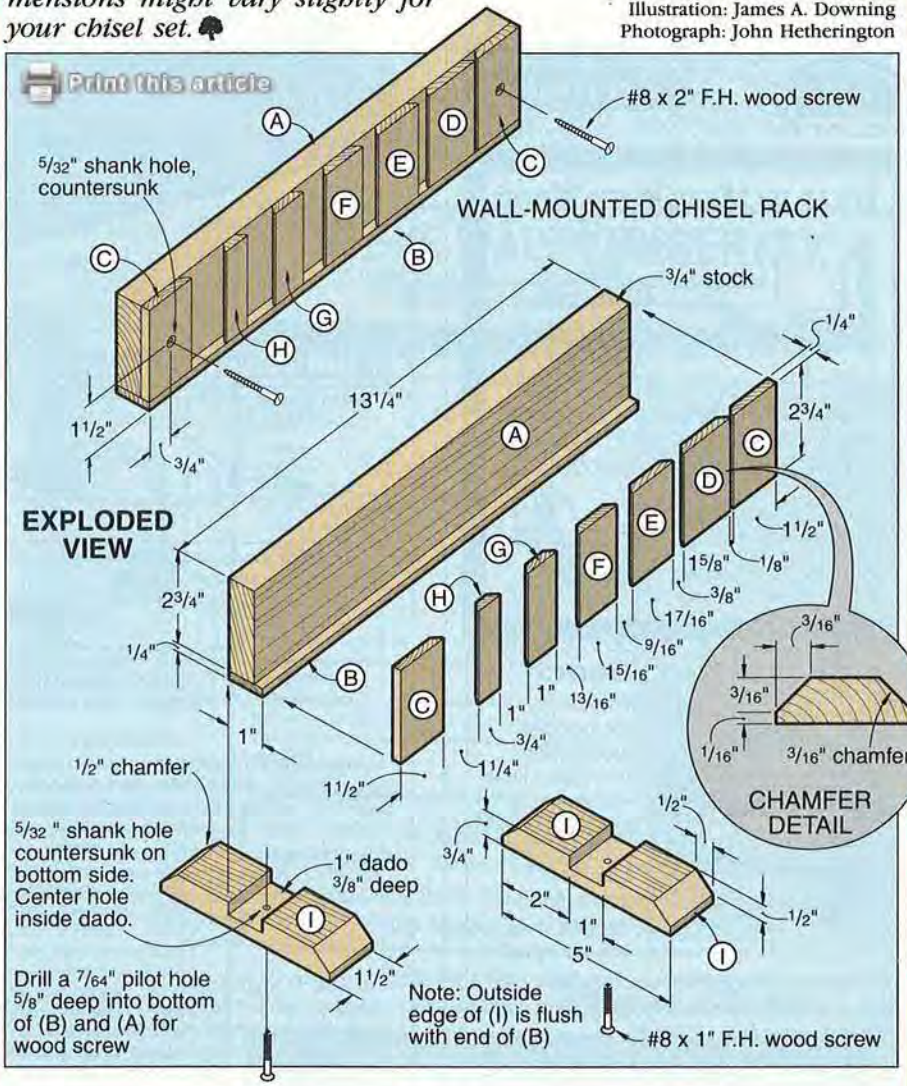
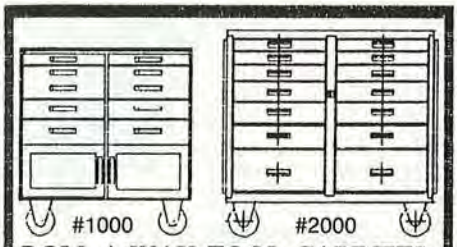
***Note:** We built our rack for a set of Stanley no. 60 chisels. The dimensions might vary slightly for your chisel set.*

Project Design: Richard Baker
Hilltop Lakes, Texas
Illustration: James A. Downing
Photograph: John Hetherington





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Woodworking rule no. 1: Waste paper not wood

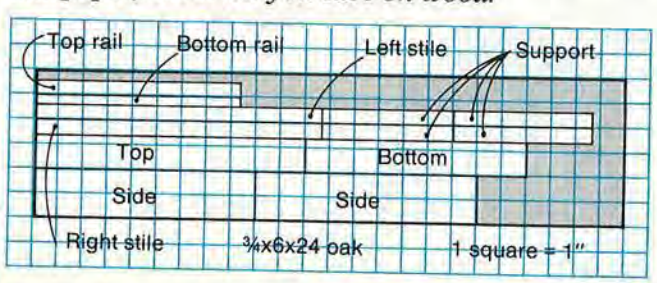
I don't have any problem working out my bill of materials for any given project, but I do have difficulty transferring that list into a cutting diagram. I either wind up short of material or I have too much waste. Is there a formula that I am not aware of?

—Ramon P. Hatch, Spring Hill, Fla.

Ramon, you won't find any magic formula in developing a cutting diagram, just a few reliable steps. Start with a sheet of graph paper and your project's bill of materials. Separate your lumber from your plywood needs, and then separate lumber parts for different species. In our example, we use ¾" oak lumber.

Next, assign a scale to your project on the graph paper. Again referring to our example, we say that one square equals 1". Draw the parts of one lumber species on the graph paper to scale, butting them end to end and edge to edge. Avoid making part groupings that extend beyond 10" wide and 8' long. (It's sometimes hard to find boards larger than this in home centers that stock hardwood.) If you have several parts to diagram, you may need to create more than one grouping. After you make your groupings, draw a board shape around each one to scale, and then label the parts, and the species, thickness, width, and length of the board. Allow for saw kerfs and add 15 percent for waste while determining the board's length and width.

Repeat this process for parts or other species needed, and plywood, too. With plywood, you'll be wise to start out by drawing either a 4×4' or 4×8' sheet to scale—whichever size appears the most practical. As you can gather, this method takes a little time and paper, but it lets you save on wood.



Maple names have him up a tree

Many hardwood dealers offer red or silver maple instead of sugar or rock maple. They say that these species of maple are as good as, if not better than, sugar maple. What is your opinion, and what are the qualities or drawbacks of one versus the other?

—Michael Stigliano, Springfield, N.J.

Michael, you have touched on the two basic groups of maple: soft and hard. Red and silver maples fall into the soft group, while sugar or rock maples belong to the hard. The wood of hard maples is not only more dense, but it has a finer texture, making it more valued by furnituremakers and cabinetmakers. Soft maple often contains dark streaks running through the grain, and is considered a secondary wood. Here, uses commonly include structural pieces inside cabinet carcases or in the hidden framing of upholstered furniture. Just so you'll know them when you see them, here are some common names for both hard and soft maples:

Hard maples: Australian, bird's eye, black, blister, Canadian, curly, European, fiddleback, Norway, hard, rock, and sugar.

Soft maples: Ashleaved, Oregon, red, river, silver, soft, striped, and swamp.

The dark secrets of finishing cherry

What is the secret of finishing cherry so it has the same deep red-wine color as the cherry furniture found in stores? Recently you published a similar letter from someone else who was trying to obtain this information, but your response was really not an answer. If there is no stain on the market, then precisely how do the furniture manufacturers obtain the red-wine finish?

—Ronald Pry, Houston, Texas

You're right, Ronald. A big difference exists in the "cherry finish" you see in furniture stores and the natural appearance of stained cherry. "Furniture manufacturers don't like to see random grain or colors in their finished products," says John Moser, a finishing expert who owns Wood Finishing Supply in Palmyra, New York. "So, before staining or coloring, they seal the wood first with a lacquer sealer. Then they add Japan colors, special pigments mixed with mineral spirits. Finally, they finish with a coat of lacquer." This makes for a uniform "red-wine" appearance, but the process blocks out much of the natural grain texture which some people appreciate more. In fact, some "cherry finish" processes used by manufacturers go on more like paint than stain. For staining products, contact Wood Finishing Supply, 100 Throop St., Palmyra, NY 14522. Or call 315/597-3743.

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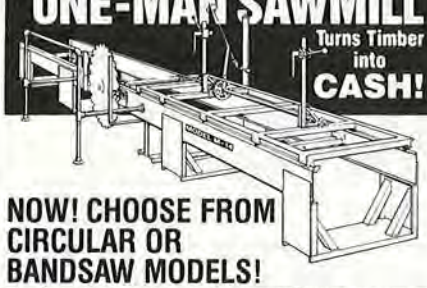

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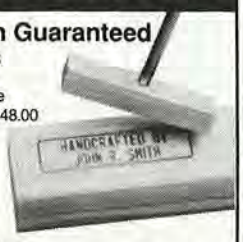

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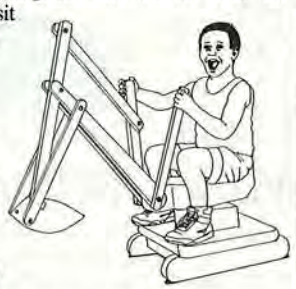

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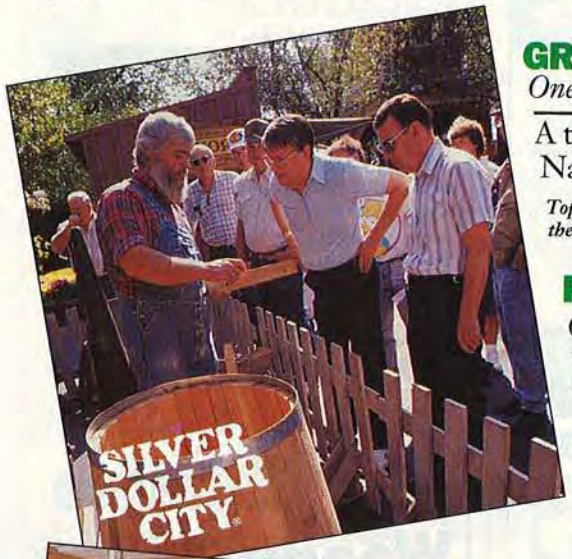
WOOD® MAGAZINE ANNOUNCES:

1993 Build-A-Toy™ Contest

Entry Deadline: February 1, 1993

Our Fifth Annual contest to benefit kids through Toys for Tots.

Don't miss a special 1992 CRAFTED FOR JOY exhibit during the National Crafts Festival September 16 thru November 1, 1992 at Silver Dollar City®, Branson, Missouri. A benefit auction of the award-winning toys will be held at the new Grand Palace Theater December 6, 1992.



GRAND PRIZE:

One Grand Prize open to original designs only for all skill levels.

A trip for a family of four to Silver Dollar City during the 1993 National Crafts Festival.*

Top photo: Silver Dollar City Theme Park: The Home of American Craftsmanship themed in a turn of the century crafts village. Plus, you'll find shops, rides, restaurants and fun!

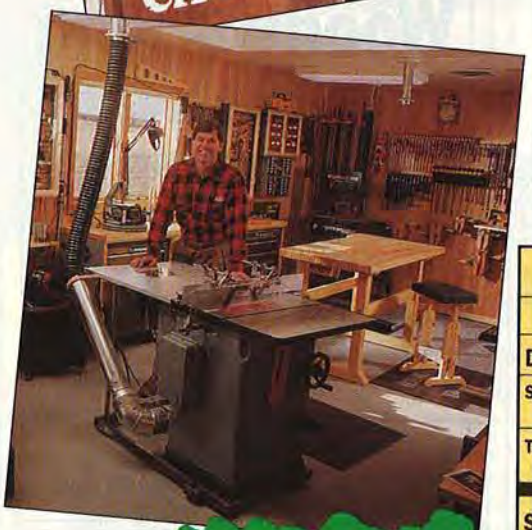
FIRST PRIZE:

One First Prize open to original and existing designs for all skill levels.

A trip to WOOD magazine's IDEA SHOP™ in Des Moines. Meet the editors and spend a day learning some great woodworking tips.*

Bottom Photo: IDEA SHOP: Editor-In-Chief Larry Clayton in the IDEA SHOP. Editors chose over 70 manufacturers to donate tools and other products for the shop.

*Transportation not included.



Six design prizes valued at over $8,500 will be awarded for toys built from original designs.

Special citation prizes are open to all woodworkers who send us a toy. There will be fifteen citation prizes valued at over $10,000 awarded.

ADDITIONAL COMPETITION PRIZES AND CATEGORIES			
	STUDENT (K-12):	**HOME HOBBYIST:**	**PROFESSIONAL:**
DESIGN PRIZES: These 6 categories are open to original designs only.			
Second Prize	Delta: $1,000 in merchandise	Trendlines: $1,500 in merchandise	Eagle America Corp.: $1,500 in merchandise
Third Prize	RBI: $1,500 in merchandise	Delta: $1,500 in merchandise	Atlas Copco Electric Tools Inc.: $1,000 in merchandise
SPECIAL CITATIONS: These 15 categories are open to both original and existing designs.			
Best use of Wood	Constantine: $100 in merchandise	Craftsmans Corner: $1,500 in merchandise	Dremel: $1,500 in merchandise
Best Finish	Behlen: $200 in merchandise	Behlen: $300 in merchandise	Behlen: $500 in merchandise
Greatest Number of Toy Entries	Leichtung: $250 in merchandise	Porter Cable: $1,000 in merchandise	Econ-Abrasives: $250 in merchandise
Best Transportation Toy (Includes: Trains, Planes, Cars)	Skil: $500 in merchandise	Vermont American: $1,000 in merchandise	American Tool Cos.: Quick-Grip Bar Clamp & Vise Grip Locking Clamp ($1,000 retail value)
Best Pull Toy	Tool Crib of the North: 3303 ELU Router (retail value: $235)	Meisel Hardware Specialties: $500 in merchandise	SEARS Craftsman: $500 in merchandise

1992 Build-A-Toy entries being judged by the editors of WOOD Magazine and guest judges.

1991 CRAFTED FOR JOY exhibit: Award-winning toys on display at a children's gallery in Studio City, CA.

Holiday party in California. Over 80 underprivileged children were entertained and given a handcrafted wooden toy from WOOD magazine.

BUILD-A-TOY CONTEST:

We're proud to invite woodworkers of every age and skill level to enter our Fifth Annual *Build-A-Toy*™ Contest. Your toy may be built from original or existing plans.

Build-A-Toy™ is the best way we know of for woodworkers to get the recognition they deserve for great craftsmanship. And many of the toys submitted will be exhibited and auctioned to raise thousands of dollars to purchase toys for children.

1992 CRAFTED FOR JOY EXHIBIT:

Our Crafted for Joy exhibit of award-winning toys designed and built by previous *Build-A-Toy*™ winners will be on display at the National Crafts Festival at Silver Dollar City®. Over 300,000 people are expected to attend.

BENEFIT AUCTION:

A special auction of the toys will take place on December 6, 1992 at the Grand Palace Theater in Branson, Missouri. The money raised will be given to the Toys For Tots program of the U.S. Marine Corps Reserve so that the Marines can buy more toys for more kids. Last year's benefit auction, which took place in Studio City, CA, raised over $12,000.

ENTER NOW!

Enter our *Build-A-Toy*™ contest now; help promote the wonderful craft of woodworking, have a chance to win some terrific prizes and make a child very happy this holiday season!

A GIFT FROM WOOD:

Each person who enters our toy contest will receive a "Buy One Admission Get One Admission Free" coupon to Silver Dollar City® Theme Park.

If you enter before November 20th you'll also receive an invitation to attend WOOD's benefit auction December 6, 1992 at the new Grand Palace Theater. This is an opportunity to meet the editors of WOOD magazine and other contest entrants, and see how our *Build-A-Toy*™ and CRAFTED FOR JOY programs work together to benefit Toys For Tots.

Crafted for Joy
children's wooden toys

1993 RULES

1. Projects must fit into a box no larger than 2' x 2' x 2'. The primary material should be wood, but may incorporate other materials.
2. Please follow Consumer Product Safety Commission guidelines: nontoxic wood finishes only; no parts smaller than 1 1/4" square on toys for children under three years of age; no sharp corners or points; pull strings longer than 12" should not have beads or other attachments that could tangle and form a loop.
3. Entries must be received by February 1, 1993. All entries must be postpaid; collect entries will be refused. Attach an entry label, photocopy of an entry label or a 3-1/2" x 5" card with your name and address to each toy.
4. Woodworkers who build toys from existing plans will be eligible for First Prize and Special Citation prizes only. Woodworkers who build their own original designs will be eligible for all prizes. All entrants will receive a "buy one admission get one admission free" pass to Silver Dollar City (retail value $20.00) within 4-6 weeks of receipt of toy. One coupon per person only, regardless of the number of toys sent in. No purchase necessary.
5. Entry constitutes permission to use winner's name, hometown and photograph for promotional purposes. Employees and family members of Meredith Corporation, their affiliates and subsidiaries are ineligible. Void in Quebec.
6. Winners will be selected and notified by mail on or about April 15, 1993, and will receive the prize directly from the manufacturer/distributor. For a list of winners, send a separate, self-addressed stamped envelope to BUILD-A-TOY, 1912 Grand Avenue, Des Moines, IA 50309-3379.
7. Meredith Corporation will donate all entries or auction money received from entries to the U.S. Marine Corps Reserve Toys-for-Tots program.
8. **For woodworkers who enter their toy as an original design:** Toy must be your own original design. A different approach to an existing toy would qualify. Please do not enter toys with only subtle changes from published patterns.
9. A panel of representatives from the U.S. Marine Corps Reserve, Meredith Corporation and woodworking experts will judge the toys on child's appeal, craftsmanship, originality, and durability. The panel's decision will be final.
10. Professional woodworkers include woodworking teachers and anyone earning income by selling wooden items.
11. Grand and First Prizes do not include transportation.

WOOD® Magazine's 1993 BUILD-A-TOY™ Competition

There is no limit to the number of entries. Please provide the following information for each toy submitted.

My entry is: ❑ Original design* ❑ Built from plans

My skill level is:
❑ Student (K-12) ❑ Home Hobbyist ❑ Professional

*For Original Design entries: I certify that I have designed and built this toy myself. Should my entry win, I agree to cooperate with WOOD Magazine to supply builder's notes and a bill of materials for publication.

Signature _____

Date _____

Name _____

Address _____

City _____

State _____ ZIP _____

Phone (____)_____

Send toys to: 1993 BUILD-A-TOY, WOOD Magazine, 1912 Grand Avenue, Des Moines, IA 50309-3379

1993 BUILD-A-TOY ENTRY DEADLINE: FEBRUARY 1, 1993.

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Model		List	Sale
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23-880	8" Bench Grinder 1/2 HP	151	115
11-950	8" Drill Press	199	144
28-160	10" Hobby Band Saw	210	145
31-050	1" Belt sander 2.0 amp	104	78
31-460	4" Belt/Disc Sander	198	145
31-340	NEW 1" Belt/8" Disc Sander	268	188
31-080	NEW 1" Belt/5" Disc Sander	134	94
40-560	16" 2 speed Scroll Saw	266	183
11-990	12" Bench Drill Press	276	209
11-090	32" Radial Bench Drill Press	399	285
43-355	3/4" Shaper 1-1/2 HP	964	709
43-505	1/2" Bench Router/Shaper	399	279
22-540	12" Bench Top Planer	595	398
36-220	10" Compound Mitre Saw	350	235
28-180	Bench Band Saw	232	167
40-640	NEW 20" Bench Scroll Saw	466	325
23-675	NEW 6" Grndr/3x24Belt Sndr	141	105
14-600	Hollow Chisel Mortiser	668	445
46-700	12" Wood Lathe	548	419
34-761	10" Unisaw 1-1/2 HP	1715	1325
33-990	10" Radial Arm Saw	818	589
37-280	6" Motorized Jointer	488	395
50-179	3/4 HP 2 stage Dust Collector	483	335
70-200	NEW 20" Floor Drill Press	1049	815
33-055	8-1/4" Sawbuck comp w/legs	865	579
34-330	NEW 8-1/4" Table Saw 13A	343	228
34-670	10" Motorized Table Saw	511	395
32-100	Station Plate Jointer	645	265
36-040	8-1/4" Compound Mitre Saw	224	165
34-915	30" Unifence	385	239
34-897	50" Delta Unifence	525	279
36-755	NEW 10" Tilt Arbor Saw	1264	919
34-444	Contractors Table Saw	850	615
34-446	34-445 Saw w/EMS System	1310	835
17-900	16-1/2" Floor Drill Press	495	395
40-601	18" Scroll Saw with stand	942	719
22-662	13" Planer complete - 2HP	1499	1169

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34-445	34-444 Saw w/30" Unifence	1200	809
37-154	DJ15 6"Jointer w/3/4HPmotor	1420	1079

MILWAUKEE TOOLS

6527	NEW Sawzall with case	299	164
6528	above Sawzall w/wired cord	295	164
6125	NEW 5"Random Orbit Sander	200	119
6126	NEW 6"Random Orbit Sander	205	125
0399-1	12V cordless Drill Kit comp	304	164
0402-1	above Drill w/keyless chuck	309	168
0395-1	9.6V cordless Drill with case	284	158
0224-1	3/8" Drill 4.5 amp magnum	203	114
0234-1	1/2" Drill 4.5A mag 0-850 rpm	223	118
0244-1	1/2" Drill 4.5A mag 0-600 rpm	223	118
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	189	105
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	183	102
0375-1	3/8" close quarter Drill	223	127
0379-1	1/2" close quarter Drill	254	145
6539-1	cdls Screwdriver 190 rpm	127	75
6546-1	cdls Scrwdvr 200 & 400 rpm	138	79
5399	1/2" D-hdle Hammer Drill Kit	319	184
6750-1	Drywall Gun 0-4000 5 amp	162	93
6507	Original SawZall with case	249	135
6014	Orbital Sander 1/2 sheet	214	118
8977	variable temp. Heat Gun	122	75
5397-1	3.8" var. spd Hammer Drill Kit	244	138
5371-1	1/2" var. spd Hammer Drill Kit	335	185
3107-1	1/2" v/spd right angle Drill Kit	370	198
6754-1	Drywall Gun 0-4000 5.4 amp	192	114
3300-1	1/2" var. spd right angle Drill	329	184
5680	Router 2 HP - 12 amp	355	205
0235-1	1/2" Drill w/kyls chuck mag	223	125
6145	4-1/2" Grinder 10,000 rpm	162	98
6142	6145 with case & acces	199	129
6749-1	Drywall Gun 0-2500 5.4 amp	224	119
6365	7-1/4" Circular Saw 13 amp	214	120
6367	above Saw - double insulated	209	125
6366	6365 w/fence & carbide blade	224	125
6368	6365 w/fnce,carb. blde,& cse	244	134
6377	7-1/4" Worm Drive Saw	324	174
6256	Top Handle Jig Saw	220	135

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Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B.	10° 40	67	37
LU82M010	Cut-off 10"	60	90	49
LU84M011	Comb 10"	50	76	38
LU85M010	Super Cut-off	10° 80	112	54
LM72M010	Ripping 10"	24	66	35
LU73M010	Cut off 10"	60	82	44
LU87M010	Thin Kerf 10"	24	70	37
LU88M010	Thin Kerf 10"	60	86	42
LU98M010	Ultimate 10"	80	125	67

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TK206	10" Framing	24	38	25
TK303	7-1/4" Finishing	40	37	22
TK306	10" Finishing	40	46	25
TK906	10" Combo	50	52	29
SD306	6" Dado - Carbide		215	109
SD308	8" Dado - Carbide		229	119
F0	1-3/4" x 5/8" Biscuit 1000 Qty		32	29
F10	2-1/8" x 3/4" Biscuit 1000 Qty		32	29
F20	2-3/4" x 1" Biscuit 1000 Qty		34	29
FA	Assorted Biscuits 1000 Qty		34	29
FB100	16 piece Forstner Bit Set		331	165
94-100	5 pc. Router Bit Door System		319	165
FT2000E	3-1/4 HP v/spd Plunge Router		410	204
JS100	Biscuit Jointer with case		334	159

Buy a JS100 Jointer and receive Freud's New G100 Glue System FREE!

MAKITA TOOLS

Model		List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	124	74
6071DWK	above Drill w/removable batt	194	109
5090DW	3-3/8" Saw Kit 9.6 volt	250	138
6010DWK	3/8" cordless Drill Kit 7.2V	173	97
6010SDW	3/8" cordless Drill Kit 7.2V	96	59
DA3000DW	3/8" Angle Drill 7.2 volt	241	136
4390DW	9.6 cordless Recip Saw Kit	234	129
6012HDW	2 speed Drill w/clutch-comp	236	125
6092DW	var. speed Drill Kit complete	257	127
6093DW	v/spd Drill w/clutch-complete	261	135
6093DWL	6093DW Drill Kit w/Flash Lt	299	169
6095DWE	6095DW Drill Kit w/2 batteries	270	139
632007-4	9.6 volt Battery	47	30
632002-4	7.2 volt Battery	39	28
5007NBA	7-1/4" Saw w/electric brake	243	127
5008NBA	8-1/4" Saw w/electric brake	301	163
B04510	1/4 sheet Pad Sander	93	54
9900B	3" x 21" Belt Sander w/bag	283	144
9924DB	3" x 24" Belt Sander w/bag	299	159
9045N	1/2 sheet Fin. Sander w/bag	246	129
4301BV	Orb. var. spd Jig Saw 3.5A	262	142
JR3000V	var. speed Recip Saw w/case	239	129
LS1020	10" Mitre Saw 3.5 amp	571	299
9820-2	Blade Sharpener	394	194
1900BW	3-3/4" Planer with case	221	116
1911B	4-3/8" Planer 7.5 amp	255	139
1100	3-1/4" Planer with case	434	229
9207SPC	7" Sander/Polisher	294	154
3601B	1-3/8 HP Router	261	139
B04550	1/4 sheet Pad Sander w/bag	91	56
DA3000R	3/8" Angle Drill	285	152
HP2010N	3/4" var. spd Hmr Drill w/case	304	167
2708W	8-1/4" Table Saw	519	269
2711	10" Table Saw with brake	868	485
1805B	6-1/8" Planer Kit with case	731	369
5005BA	5-1/2" Circular Saw	238	135
6404	3/8" Drill Rev. 0-2100 rpm 2 A	105	57
6510LVR	3/8" Drill Rev. 0-1050 rpm	152	83
6820V	0-4000 rpm Drywall Gun 5.2 A	160	90
6013BR	1/2" Drill Rev. 6 amp	263	139
5402A	16" Circular Saw 12 amp	675	345
3612BR	3 HP Plunge Router	347	164
9401	4" x 24" Belt Sander w/bag	343	174
4302C	var. speed Orbital Jig Saw	283	159
5077B	7-1/4" Hypoid Saw	260	138
LS1440	14" Mitre Saw	759	429
LS1030	NEW 10" Mitre Saw	428	225
5007NB	7-1/4" Circular Saw 13 amp	214	114
3612B	3 HP Plunge Router sq/base	347	165
2012	12" Portable Planer	913	468
LS1011	10" Slide Compound Saw	859	439

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	377	275
SFN2	Finish. Nailer 1-1/2" - 2-1/2"	571	395
SN325	Nailer 1-7/8" - 3-1/4"	665	455
SN4	General purpose 2" - 3-1/2"	685	468
LS2	Pinner 5/8" - 1"	351	255
SKS	Stapler 5/8" - 1-1/2"	351	255
LS5	Pinner 1" - 1-1/2"	399	285

BOSTITCH AIR NAILERS

N80S-1	Stick Nailer Super Sale		359
N80C-1	Utility Coil Nailer	845	409
N12B-1	Coil Roofing Nailer	845	418
N50FN-2	Finishing Nailer	625	355
T31	Brad Nailer	270	162
CWC100	1 HP Pancake Compressor	445	295

SKIL SIZZLERS

3810	10" Mitre Saw	263	205
3810K	3810 w/60 tooth Carbide Blade		229
77	7-1/4" Worm Drive Saw	230	144
5825	6-1/2" Worm Drive Saw	255	159
2735-04	12 volt cordless Drill Kit	210	134
2735-04X	2735-04 with keyless chuck	235	137
1605-02	NEW Biscuit Jointer w/case	200	119
7584	NEW 5" Rndm Orbit Sander	160	104

PANASONIC CORDLESS

EY6205BC	NEW variable speed 12 volt Drill w/15 minute charger & case	390	178
EY6200B	NEW 2 speed 12 volt Drill D-handle with 15 minute charger	350	178
EY6281BC	NEW variable speed 9.6 volt Drill w/15 minute charger & case	350	159
EY571B	var. speed 9.6 volt Drill Kit	239	128
EY571BC	EY571B with case & 2 batt	275	158
EY6207BC	NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 minute charger & case	421	218

PASLODE IMPULSE GUNS

IM250	Trimpulse Finish Nailer Kit	849	615
IM325	Impulse Framing Nailer Kit	849	615
402500	Extra Battery	Sale	42.95
402502	No-Mar Work contact element	Sale	19.25

HITACHI TOOLS

C7SB	7-1/4" Circular Saw	214	109
DTC10	3/8" 7.2 volt cordless Drill	138	78
C7BD	7-1/4" Circular Saw with brake	230	127
M12V	NEW 3 HP var. speed Router	447	225
TR12	Plunge Router 3 HP	354	169
F1000A	12" Planer/6" Jointer	2835	1519
C10FA	10" Deluxe Mitre Saw	538	274
C12FA	NEW 12" Mitre Saw	632	305
C8FB	8-1/2" Slide Compound Saw	899	445
FREUD LU91M008	8-1/2" Carb bld 48 t	68	43
C15FB	15" Mitre Saw	745	379
FREUD LU85M015	15"c/bld 108 tooth	180	105

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PIRANHA By B & D CARBIDE TOOTH BLADE

Model #	Dia.	Teeth	List	Sale
73-716	6-1/2	18	13.70	7.55
73-717	7-1/4	18	13.90	7.99
73-737	7-1/4	24	17.20	9.29
73-757	7-1/4	40	31.30	16.89
73-759	8-1/4	40	44.65	24.99
73-719	8-1/4	22	19.65	11.95
73-715	5-1/2	16	13.70	7.99
73-740	10	32	32.98	17.95
73-770	10	60	67.02	33.95

PORTA NAILER

401	Porta Nailer complete	265	189
501	Face Nailer complete	265	189

We stock genuine Porta nails !

WERNER LADDERS

6204	4' Fiberglass	179	65
6205	5' Fiberglass	199	75
6206	6' Fiberglass	215	80

FALL KIT SPECIALS

6093DWH	Makita cdls var. spd Drill Kit w/clutch & brake. Includes extra battery & holster	313	167
9852K	Porter Cable 9852 Drill Kit w/extra batt	185	
9853K	Porter Cable 9853 Drill Kit w/extra batt	185	
7334K	Porter Cable 5" Random Orbit Sander with case & 1 roll 100X & 150X discs	253	152
7335K	Porter Cable 5" var. spd Random Orbit Sndr w/cse & 1 roll 100X & 150X discs	273	162
7336K	Porter Cable 6" var. spd Random Orbit Sndr w/cse & 1 roll 100X & 150X discs	278	169
555K	Porter Cable Plate Biscuit Jointer with case & 1000 assorted biscuits	339	192
JS100K	Freud Jointer w/cs & 1000 biscuits	351	186
1581VSK	Bosch Top Handle Jig Saw with case & 30 Bosch blades	305	182
1582VSK	Bosch CLIC Barrell Grip Jig Saw with case & 30 Bosch blades	305	182

BIESMEYER FENCES

B-50	50" Commer. Saw Fence	329	295
T-SQUARE 52	52" Homeshop Fence	249	235
T-SQUARE 40	40" Homeshop Fence	242	209

WEDGE SMART LEVEL

SM-PR2	2 FT Level with sensor	120	88
SM-PR4	4 FT Level with sensor	150	105
SM-PR6	78" Level with sensor	180	139
SERIES200	NEW 2FT Level with sensor		54.95

Msx636 FEIN	Electric Oscillating Triangle Sander Kit	Sale	279
LPN672 PONY	Air Palm Nailer w/glove	Sale	94.99

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Jaw Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.00	11.89	61.00
#1	10"	6"	21.76	12.89	70.65
#2	12"	8-1/2"	24.95	14.95	80.95
#3	14"	10"	31.61	18.95	104.95
#4	16"	12"	42.30	24.95	143.95

JORGENSEN STYLE 37 2-1/2"Throat 1/4"x3/4"

Item#	Jaw Length	List	Sale	Box of 6
3706	6"	9.86	6.25	34.75
3712	12"	10.92	6.75	37.75
3718	18"	12.05	7.25	40.75
3724	24"	13.16	8.19	43.75
3730	30"	14.70	9.10	49.75
3736	36"	16.05	10.19	55.75

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	13.61	7.89	84.99
52	1/2" Black Pipe Clamps	11.37	6.50	69.50

BOSCH

1581VS	Top Handle Jig Saw	265	131
1582VSC	NEW CLIC Barrell Jig Saw	265	131
	Bosch Metal Case for above Jig Saws	34	32
	Bosch 30 blade assortment for Jig Saws		26.99
1942	Heat Gun 600° - 900°	111	69
1272D	3" x 24" Belt Sander with bag	329	178
1273D	4" x 24" Belt Sander with bag	345	187
11-212VSR	Bulldog 3/4"SDS Rtry Drill	370	199
1194VSR	1/2" var. speed Hammer Drill	264	145
1194VSRK	above Hammer Drill w/case	292	179
1608	5.6 amp Laminate Trimmer	149	84
1609K	Lam Installers Kit with 1609	309	175
1609KX	Deluxe Installers kit	361	198
1601	1 HP Router	184	110
1602	1-1/2 HP Router	215	132
1603	1/2 HP D-handle Router	252	143
1604	1-3/4 HP 2 Handle Router	236	128
1604K	same as above w/cse & acc	287	165
1606	1-3/4 HP D-handle Router	273	155
3258	3-1/4" Planer w/blade guard	239	137
3258K	3258 Planer with steel case	265	152
3270D	3" x 21" Belt Sander with bag	260	142
1273DVS	var. spd 4" x 24" Belt Sander	370	188
1614	NEW 1HP Plunge Router	220	128
1614EVS	NEW 1-1/4HP v/spd Plge Rtr	255	149
1613	NEW 1-3/4 HP Plunge Router	286	164
1613EVS	NEW 2HP v/sp Plunge Router	320	184
1615	NEW 3 HP, Plunge Router	395	228
1615EVS	NEW 3 HP v/spd Plge Router	460	255
1632VSRK	Recip Saw 8.4A orb-w/spd	225	145
3050VSRK	9.6V cdls v/sp Drill Kit comp	256	135
3051VSRK	3050VSRK w/keyless chuck	266	145
1370DEVS	6" Random Orbit Sander	481	249
3283DVS	5" Random Orbit Sander	159	98
3283DVSK	3283DVS Kit complete	220	129

ELU BY BLACK & DECKER

Model		List	Sale
3338	2-1/4 HP v/spd Plunge Router	427	249
3304	1 HP var. spd Plunge Router	292	164
3375	3-1/8" Univ. planer 7.2 amp	313	155
3380	Biscuit jointer with case	542	248
4024	3 x 21 var. speed Belt Sander	322	184

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	100	65
2600	3/8" Drill 0-1200 rpm 4.5 amp	142	89
1703	10" Mitre Saw w/73-770 blde	313	179
4011	1/4 sheet Palm Sander	82	59
79-034	Workmate 400	175	105
2694	7-1/4" Super Saw cat w/case	248	137
2695	8-1/4" Super Saw cat w/case	271	153

DAVID WHITE

LP6-20	Sight Level package - 20x	310	198
L6-20	Meridian Level - 20x	290	189
LT8-300	Level Transit - 26x	650	445
LT8-300P	above Level w/optical plum	769	525
LT6-900	Level Transit - 20x	389	245
ALT6-900	Automatic Level - Transit - 18x	549	385
ALTP6-900	above Level w/tripod & rod	600	435
AL6-18	Automatic Level - 18x	439	319
ALP6-18HD	above Level w/tripod and rod	550	372

RYOBI SPECIALS

JP-155	6-1/8" Jointer/Planer	611	295
R500	2-1/4" HP Plunge Router	331	155
TS-254	NEW 10" Mitre Saw	397	198
TS-254K	above Saw with acc. kit & B&D 73-770 carbide blade	495	245
AP10	10" Surface Planer 13 amp	820	355
RA200	8-1/4" Radial Arm Saw	520	244
RE600	3 HP Plunge Router	431	204
BE321	3" x 21" var. spd Belt Sander	272	129
SC160	NEW 16" Bench Scroll Saw	261	139
TFD220VRK	12V cordless Drill Kit	325	165
JM100K	NEW Biscuit Jointer w/case	431	204
RS115	NEW4-1/2"v/sp Rdm Orb Sndr	134	74
BT3000	NEW 10" Table Saw	699	539
W660	BEST BUY 7-1/4"Circ Saw 13A	179	88
TSS220	NEW 8-1/2" Slide Comp. Saw	790	449
TS260	NEW 10" Compound Mitre Saw	454	239

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	559
STANDARD 10	"Professionals Choice"	499	399
COBRA	NEW Biscuit Joiner	Special	299

PORTER CABLE

690	1-1/2 HP Router 8 amp	240	128
691	1-1/2 HP Router D-handle	260	141
695	1-1/2 HP Router/Shaper	335	204
696	HD Shaper Table	185	123
351	3" x 21" Belt Sander w/o bag	245	140
352	3" x 21" Belt Sander with bag	255	142
360	3" x 24" Belt Sander with bag	330	178
361	3" x 24" Belt Sander w/o bag	310	174
362	4" x 24" Belt Sander with bag	345	188
363	4" x 24" Belt Sander w/o bag	330	184
315-1	7-1/4" Top Hdle Circular Saw	210	118
9315-1	315-1 comp. w/cs & carb bld	240	137
617	7-1/4" Pushhandle Saw	210	119
9617	617 comp. w/cse & carb blde.	240	137
314	4-1/2" Trim Saw	240	138
97750	1/2" v/spd Hammer Drill w/cse	260	155
9548	X HD Bayonet Saw with case.	320	202
9629	Recip Saw var. speed 8 amp	250	144
666	3/8" HD v/spd Drill 0-1200 rpm	200	125
621	3/8" HD v/spd Drill 0-1000 rpm	170	104
320	Abrasive Plane 3 amp	190	125
9118	Porta Plane Kit 7 amp	360	204
7545	0-2500 Drywall Gun 5.2 amp	185	114
505	1/2 sheet Pad Sander	210	114
7511	3/8" var. speed Drill 5.2 amp	200	113
7514	1/2" var. speed Drill 0-750 rpm	210	118
7515	7514 with keyless chuck	215	124
7549	Top handle Jig Saw 4.8 amp	250	149
330	Speed Block Sander 1/4 sheet	103	58
555	Plate Biscuit Jointer with case	315	165
345	6" Saw Boss 9 amp	180	102
9345	345 comp. w/cse & carb blde	210	124
100	7/8 HP Router	175	105
5116	Omni-Jig	400	255
9647	TIGER CUB Recip. Saw	195	115
9637	Full var/spd Recip Saw 8 amp	250	138
7519	3-1/4 HP Router 2 Handle	410	224
7518	3-1/4 HP 5 speed Router	475	259
7536	2-1/2 HP 2 Handle Router	355	199
7537	2-1/2 HP D-handle Router	375	209
7538	3-1/4 HP Plunge Router	410	224
7399	5.6 amp Drywall Cutout Unit	140	85
7310	5.6 amp Laminate Trimmer	150	88
7312	5.6 amp Offset Base Lam Trim	215	124
7319	5.6A Tilt Base Lam Trimmer	170	100
97310	Laminate Trimmer Kit comp	345	192
7334	5" Random Orbit Sander	210	119
7335	5" var. spd Rndm Orbit Sndr	230	129
7336	6" var. spd Rndm Orbit Sndr	235	134
73333	NEW Dust Collection system		24.50
693	1-1/2 HP Plunge Router Base	295	165
6931	Plunge Router Base	120	75
7539	3-1/4HP var/spd Plunge Router	475	262
9852	12V 3/8"Drill w/cse 0-1000rpm	270	149
9853	9852 with keyless chuck	270	149
9854	12V 1/2" Drill w/cse 0-360 rpm	280	159
8500	12V battery for above drills	Sale	39

New Tools by Porter Cable

332	Palm Grip Rndm Orbit Sander	109	64
333	above Sander with dust bag	125	74
352VS	3x21 Belt Sander w/bag v/spd	280	164
7116	24" Omni Jig	470	268

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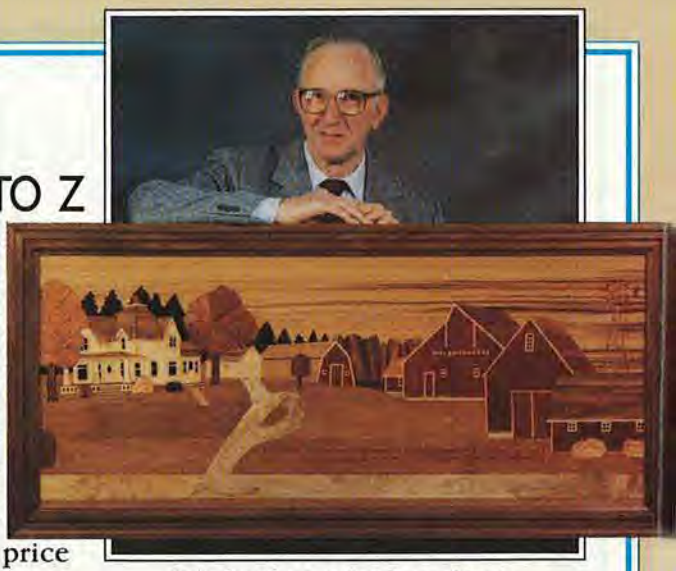
FINISHING TOUCHES

THE FAMILY FARM, IN WOOD FROM A TO Z



K.K. Brinkmeyer's labor of love.

When K. K. "Brink" Brinkmeyer of Dysart, Iowa, and his 10 brothers and sisters sold the family farm to settle his parents' estate, he thought he had better record its image for posterity. For Brink, a hardware store owner, that didn't mean digging out the camera. An avid woodworker, he had another idea—re-create the farmstead in different woods.

Four hundred and two ¼"-thick pieces of 36 wood species and "God only knows how many hours" later, Brink unveiled his masterpiece. The 24×48" marquetry picture shown *right* depicts the family farm as it was when he grew up. "Now, there's nothing left," he says. "The new owner bulldozed it to add to his tillable land."

Becoming a part of the United States in the westward expansion of the Louisiana Purchase, the farm was first bought from the government in 1804 for 18 cents an acre. By 1899, when Brink's grandfather became owner, the price had risen to $37.50 per acre. The sale in 1988 brought $1,280 an acre.

To give future Brinkmeyer generations insight into their roots, Brink inscribed a chronology of the land sales and a family tree dating back to 1468 on the back side of his work. For good measure, he added the names of all the wood species he used and where they're located in the picture—the chestnut sky, the mesquite in the tree by the garage, the silkwood grass, and so forth.

Although he worked on the picture off and on for nearly two years, Brink still has a fondness for ambitious projects: "I don't like quick-and-easy woodworking."

NORTHWEST FORESTS YIELD MORE THAN TIMBER

The bark of the Pacific yew tree (*Taxus brevifolia*) contains the cancer-fighting drug taxol. What other potential wonder cures might lurk in the Northwest's ancient Douglas-fir forests?

Scientists don't yet know for sure, but field botanists point to Oregon oxalis, a groundcover long used by Native Americans to ease eye irritation. Then there's foamflower and the pitch of western white pine for coughs, salad leaf to cool burns, and skunk cabbage for easing rheumatism. These are all forest associates of yew.

WOODWORKING CLUBS: WHO'S OUT THERE?

Attention, woodworkers! If you belong to a woodworking club, we'd like to hear from you. From time to time, we'd like to solicit article ideas, tips, and maybe even some scouting help, from active hobbyists. But for this networking, we need some names.

Here's our plan: For every club that responds (please include president's name, phone number, club size, and permanent mailing address), we'll send back a copy of our book *335 Great Shop Tips*. That's a $10 value, for use in your club's library (only one book per club, though). Address correspondence to: *Clubs,* WOOD® *magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.*

CORDLESS PIONEER LAUNCHES RECYCLE PROGRAM

Unlike single-use alkaline batteries, rechargeable batteries contain the metallic elements nickel and cadmium (Ni-Cad), which can be recycled into new rechargeable batteries. And Black & Decker, the company that in 1961 introduced the first rechargeable Ni-Cad battery-powered drill, wants back the spent batteries from their products.

According to Black & Decker, Ni-Cad batteries last up to seven years. But, when they no longer hold a charge, or the length of the charge diminishes, it's time for a change. New Ni-Cad batteries cost from $8 to $20, but installation is free at any of the company's 750 authorized service centers around the nation. Just bring in the tool, and service people will take out the old and put in the new. Call 800/762-6672 for service locations.

Photograph: Courtesy of K.K. Brinkmeyer Illustrations: Jim Stevenson

Now, Bit Depth Adjustments To The Thickness Of A Sheet Of Paper... From Any Plunge Position.

To dramatize the precision of our new plunge routers, we plunged and cut through a sheet of #20 bond paper — without putting so much as a swirl on the antique desk beneath.

Bit depth adjustment precision exceeding .004" is just the start of the advantages our Model 1613 and 1614 series plunge routers give you. Now you can make those micro-fine adjustments from any plunge position, without sacrificing plunging action. But only with Bosch. Other plunge routers force you to lock them down to make fine adjustments — in effect, making them standard routers. Our system makes precise adjustments far easier for inlay work, edge forming and fixture routing.

We designed in a lot of other features you asked for, too. Like a resettable depth indicator that can be zeroed in any position. And templet guides that are securely held in the base and quickly changed at the push of a lever. Even the chip shield flips out of your way for fast bit and templet guide changing.

Zero and adjust the dial in any plunge position.

Then there's that smooth, raw, Bosch power that lets you make high speed passes for aggressive stock removal. And on the electronic models, your selected speed is maintained even under full load.

Change templet guides with a push of a lever.

For detailed product information on single speed Models 1613 and 1614 and electronic variable speed Models 1613EVS and 1614EVS, contact your Bosch dealer. Ask him for a demonstration and price. You'll soon discover real Bosch precision, performance and value.

BOSCH

"Quality You Can Hold On To."™

NOW! PLANE, MOLD, SAND and SAW with *Infinitely Variable Power-Feed!*

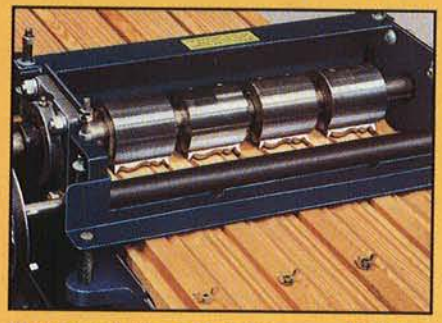
MAKES YOU MONEY... SAVES YOU MONEY!

Put this versatile power-feed tool to work in your shop . . . see how fast it pays for itself! Quickly converts low-cost rough lumber into valuable finished stock. Turns out perfect picture frame moldings, quarter-round, casing, tongue and groove . . . all popular patterns . . . any custom design.

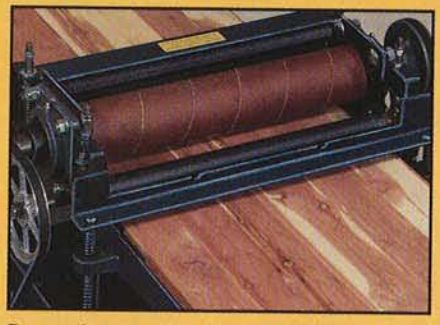
Just a twist of the dial puts twice as many cuts-per-inch at your fingertips as any comparable planer – from 70 to over 1,000 CPI! This heavy-duty machine will sail through even the toughest oak at higher speeds, or you can slow it down to handle those "hard-to-work" pieces like curly maple, knotty cedar, burls, knees and much more! A valuable feature for molding work, where profiles make sanding impossible.

Change to Molding, Sanding or Sawing in just minutes! Unique "Morse-Taper" Quick Change Cutterhead guarantees fast changeover . . . bearings remain factory set . . . precisely aligned at all times.

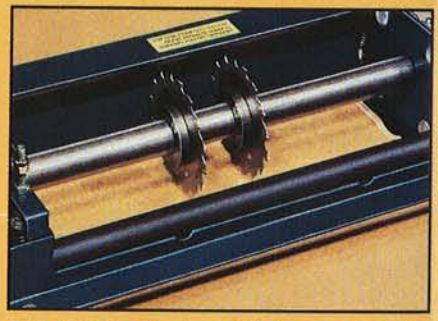
Now choose from three powerful models! Woodmaster introduces the first 18″ and 25″ Planer/Molders . . . with all the features that have made the 12″ model the most versatile Planer/Molder on the market! Send for Free Facts today!



Woodmaster's Quick-Change Molding Head lets you create custom moldings from any stock. Choose from over 250 standard trim and picture frame patterns . . . or design your own!



Power-fed sanding speeds production and improves the quality of your work. No more waves or cross-grain scratches. Separate sanding head installs in just minutes.



New ripsaw attachment lets you gang-rip with power feed in a fraction of the time it takes for multiple hand-fed passes on an ordinary table saw.

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Editor, Workbench Magazine

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